

Pursuing a Grand Theory: Douglass C. North and the early making of a New Institutional Social Science (1950-1981)

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Received 18 July 2023
Revised 2 February 2024
Accepted 20 February 2024

Abstract

Purpose – The paper provides a detailed historical account of Douglass C. North's early intellectual contributions and analytical developments in pursuing a Grand Theory for why some countries are rich and others poor.

Design/methodology/approach – The author approaches the discussion using a theoretical and historical reconstruction based on published and unpublished materials.

Findings – The systematic, continuous and profound attempt to answer the Smithian social coordination problem shaped North's journey from being a young serious Marxist to becoming one of the founders of New Institutional Economics. In the process, he was converted in the early 1950s into a rigid neoclassical economist, being one of the leaders in promoting New Economic History. The success of the cliometric revolution exposed the frailties of the movement itself, namely, the limitations of neoclassical economic theory to explain economic growth and social change. Incorporating transaction costs, the institutional framework in which property rights and contracts are measured, defined and enforced assumes a prominent role in explaining economic performance.

Originality/value – In the early 1970s, North adopted a naive theory of institutions and property rights still grounded in neoclassical assumptions. Institutional and organizational analysis is modeled as a social maximizing efficient equilibrium outcome. However, the increasing tension between the neoclassical theoretical apparatus and its failure to account for contrasting political and institutional structures, diverging economic paths and social change propelled the modification of its assumptions and progressive conceptual innovation. In the later 1970s and early 1980s, North abandoned the efficiency view and gradually became more critical of the objective rationality postulate. In this intellectual movement, North's *avant-garde* research program contributed significantly to the creation of New Institutional Economics.

Keywords Douglass C. North, Grand theory, New Economic History, Transaction cost,

New Institutional Economics

Paper type Research paper

1. Prologue: a Grand Theory in economic history

Unquestionably, Douglass C. North (1920–2015) was one of the most influential economists of the 20th century. For more than six decades, North dedicated his extensive research program to unveiling the old fundamental question stated 250 years ago by Adam Smith in *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776). “I knew,” North (1997a, p. 251) recalls, “where I was going from the day I decided to become an economist. [. . .] The search

JEL Classification — B31, N00, O43

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I would like to thank Mauro Boianovsky, Eduardo Angeli, and Bernardo Mueller for their valuable comments on an earlier version of the essay. In addition, I have benefited from an anonymous referee's thoughtful and constructive suggestions. I also thank Lucas Panico de Lara for bibliographical support. Finally, a Ph.D. Scholarship from the Coordination for the Improvement of Higher Education Personnel (CAPES) of the Ministry of Education, Brazil, is gratefully acknowledged.



for the Holy Grail of the ultimate source of economic performance has taken me on a long and certainly unanticipated journey from Marxism to cognitive science, but it has been this persistent objective that has directed and shaped my scholarly career.” Indeed, North’s intellectual unfolding is characterized by pursuing a Grand Theory as a response to the Smithian grand social coordination problem. Why are some nations rich and others poor?

In the introductory essay to *The Return of Grand Theory in the Human Sciences*, the intellectual historian Skinner (1990, p. 3) defines a Grand Theory as “the construction of abstract and normative theories of human nature and conduct.” This definition is based on the famous and celebrated book *The Sociological Imagination* (1959) by the American sociologist Charles Wright Mills. In his work, Mills (1959, p. 6) argued for the integration of the domains of the individual and social sphere through “the vivid awareness of the relationship between personal experience and the wider society,” a viewpoint that gives the title of his book. Mills (1959, pp. 22–3) contrasted this approach to three widespread theoretical traditions that lack sociological imagination and harm the progress of social sciences.

The first is the exercise of interpreting recorded human history in order to construct some form of teleological philosophy of history, “a trans-historical strait-jacket” in the lines of G. W. Friedrich Hegel, Auguste Comte, and Karl Marx. The second, perhaps even more dangerous, is to seek an abstract and ahistorical general theory of human action, what Mills (1959, p. 23) called Grand Theory. That is, “a systematic theory of ‘the nature of man and society.’” The theory of choice computation under scarcity constraints of neoclassical economics comes to mind as a suitable example. The third tradition which hampers the sociological imagination is the danger of falling into pure historicism, the gathering, collection, and accumulation of “a series of unrelated and often insignificant facts.”

However, North’s pursuit of a Grand Theory to understand the nature and process of economic growth and social change is not reduced or confined in Mills’ definition above, as we intend to demonstrate. Indeed, it is North’s theoretical originality to amalgamate grand theorizing with historical and social context (i.e. what Mills called sociological imagination) to explain different institutional architectures, their dynamics, and their performance throughout history. Asked if he would agree that he specialized in “grand theorizing,” North (2008, p. 207) replied: “Yeah, that’s certainly the right way to put it. It is grand theorizing.” The Grand Theory quest is not restricted to economics or any singular academic discipline. It is a multidisciplinary effort to create what North would designate as a New Institutional Social Science (see Kling & Schultz, 2011, p. 149). Thus, it is a task much broader in scale and scope than the generally delineated in New Institutional Economics – an approach for which North is popularly known. As he put it in an interview with Brian Snowdon (2016, p. 124),

If you want to change the world you need to understand the process and dynamics of economic change. Neoclassical economics was not developed to deal with these grand issues. But to understand the dynamics of change requires a multidisciplinary approach involving knowledge from all the social sciences as well as an understanding of how societies learn. We need grand theorizing to understand the rise and fall of nations.

In this essay, we provide a detailed historical account of Douglass North’s early multifaceted theoretical contributions and analytical developments in pursuing a Grand Theory for why some countries are rich and others poor. The systematic, continuous, and profound attempt to answer the Smithian social coordination problem shaped his journey from being a young self-defined serious Marxist in his Berkeley undergraduate days in the 1940s to becoming one of the founders of New Institutional Economics in the early 1980s. In the process, North was converted in the early 1950s into a rigid neoclassical economist, being one of the intellectual leaders in promoting the New Economic History revolution in the mid-1950s and early 1960s. This movement consisted of the systematic application of traditional economic theory and quantitative econometric methods to the field of economic history.

However, in the late 1960s and early 1970s, North surprisingly became a deep critical voice of the cliometric movement, particularly the neoclassical theoretical apparatus embodied in its approach. The pronounced tension between North's pioneer early work on promoting cliometric research and his subsequent development of New Institutional Economics in the late 1970s and onwards is mainly unexplored in previous discussions on his intellectual evolution. There is a strong tendency in the literature regarding his contributions to overlook the organic whole and the endogenous tensions of his research agenda progression. This omission is particularly relevant in the disregard of the increasing intrinsic antagonism of North's promotion of neoclassical economic theory embodied in cliometrics and his ensuing advance of institutional and organizational analysis.

New Institutional Economics was born as a consequence of the failures of standard neoclassical economic theory to deal with several problems. These scientific puzzles range from why firms exist and how they operate in connection with (but not only) decisions to make within internal organizations or to buy in the market, the existence of diverse organizational arrangements present in advanced market economies, and the nature and causes of economic growth [1]. In the last decades, new economic historians have expressed great admiration for North's instrumental role as one of the founding fathers of New Economic History (e.g. McCloskey, 1994; Goldin, 1995). Similarly, new institutional economists have praised North's *avant-garde* groundbreaking work in increasingly expanding the strict domains of neoclassical economics in a process that eventually gave birth to New Institutional Economics (e.g. Myhrman & Weingast, 1994; Ménard & Shirley, 2014).

Nevertheless, there is insufficient work trying to incorporate all these formative, progressive, and antagonist elements in a coherent analytical historical narrative that accounts for North's changing theoretical and historiographical views. Therefore, for instance, Claude Ménard and Mary Shirley's chapter on "The Contribution of Douglass North to New Institutional Economics" (2014, p. 18) only mentions *en passant* his cliometric contributions justifying that it is "another subject in its own right" and starting their discussion only in 1968. Similarly, Krul (2018, p. 34) states that "North's Cliometric period is not generally considered significant within either his own career or its lasting influence on economics - it is generally mentioned only in the context of North's shift away from it, toward institutional analysis [2]." Indeed, La Croix (2018), a former Ph.D. student under North's supervision, is a rare exception in providing an excellent overview and synthesis of his mentor's contributions and their relations with cliometrics, neoclassical theory, and institutional economics. Nevertheless, La Croix (2018) inevitably also focuses most of the attention on North's work from the early 1970s onwards.

Brownlow (2010) approached some aspects of dealing with the intricate whole of North's intellectual corpus. However, his prime analysis is on the continuities and changes within North's historiographical views from a methodological perspective. Thus, following the three stages division of North's intellectual development proposed by Groenewegen, Kerstholt, and Nagelkerke (1995), Brownlow (2010, p. 308) argues that North I, from the 1950s to 1971, is predominantly a new economic historian focusing on applying neoclassical economics to historical topics. In his turn, from 1971 to 1981, North II could be classified as a mix between a new economic historian and a historical economist. In this period, his work is marked by extending neoclassical analysis to institutional choice. Finally, from 1981 onwards, North III can be read as predominantly a historical economist. In this phase, North refined the neoclassical model incorporating largely ignored themes in the standard theory, particularly questioning the objective rationality postulate [3].

This periodization is not without controversy. Indeed, as Zouboulakis (2005) argues, we could add that North III did much more from 1981 onwards than to refine the neoclassical standard model, making a turn towards historical-evolutionary economics and cognitive science. In contrast, North's former Ph.D. student and co-author Wallis (2016, p. 938) correctly

emphasizes “the unchanging core” of North’s research agenda. As Wallis writes, North “followed Adam Smith’s insight that growing specialization was the primary source of improved economic performance. Doug became famous for work that went ‘Beyond the New Economic History,’ but everything he did was rooted in the central question that launched the new economic history: How do we understand what determines the economic performance of societies? That perspective informed his work until the very end.” Therefore, how can we reconcile these different readings and views regarding the continuities, progressions, and changes in North’s evolution as a social scientist? We argue that North’s unchanging core encapsulated in the Grand Theory quest can be interpreted as the primary gravitational force encompassing the increasing tensions within his adopted neoclassical theoretical framework.

The tension between the received economic tradition and its failure to account for institutional structures and economic change urged for progressive theoretical innovations, shaping the streams of North’s analytical developments. The success of the cliometric revolution exposed the frailties of the movement itself, i.e. the limitations of neoclassical economic theory to explain economic growth and social change. The cliometric pudding proof was to eat it. Indeed, North was one of the field’s leading figures, proponents, and influential teachers. Moreover, the economics profession embarked on the revolution (as measured by job offers in economic departments, publications, research impact, *etcetera*). In this process, however, North perceived the inadequacy of neoclassical analytical instruments to account for a successful explanation of economic performance and social coordination. In his perspective, the critical failure of cliometrics as an approach to economic history is that neoclassical economics does not explain evolving economic structures and performance through time, the central task of economic history [4].

This essay investigates the early period of North’s thinking, particularly focusing on the interval spanning his first published scholarly article in 1950 to his path-breaking book on *Structure and Change in Economic History* (1981). We give more attention to his gradual development in published articles instead of his finished product books which had received much more discussion. As described by Wallis (2016, p. 938), this early period is generally neglected, with most of the contemporary attention devoted to the sequence of his famous books starting from *The Rise of the Western World: A New Economic History* (1973), co-authored with Robert Paul Thomas. We intend to provide a more comprehensive and organic historical reconstruction of North’s three-decade initial pursuit of a Grand Theory for why some societies are rich and others poor. This journey marked his first steps in making a New Institutional Social Science, comprehending lines of continuities and progressions but also ambiguities and antagonisms.

In the period analyzed, North’s response to the Smithian fundamental problem lies in the causes of political and economic institutions, institutional change, and its impact on economic growth. North (1990a, p. 3) defined institutions as “the humanly devised constraints that shape human interaction” in coordination, cooperation, and competition. An institutional matrix is composed of formal rules (e.g. constitutions and written laws), informal constraints (e.g. cultural norms, social conventions, and habits), and the effectiveness of their enforcement (which are carried by delegated third parties, second parties retaliation, or self-imposed codes). Pursuing a theory of constraints evolution that determines choices throughout time led him to incorporate transaction costs (in addition to standard neoclassical production costs), property rights, and contracts to explain divergences of economic performance across multiple social environments.

In conjunction with technology, institutions condition marginal transaction and transformation production costs, directly shaping the extent of impersonal exchange, market coordination, and economic performance. Moreover, institutions and technical progress are intimately connected and mutually dependent on different gradations. In “The Nature of the Firm” (1937), Ronald H. Coase first introduced the idea of transaction costs,

arguing that the existence of firms and their relative extension are determined by the costs of engaging in a market marginal transaction, such as the costs of discovering and keeping track of the relevant prices, determining the quality and bargaining price, monitoring and enforcing the contractual agreement, etc.

Property rights refer to the set of permissible decisions to command an economic resource, the rights to perform certain actions with its legally or socially normatively defined benefits and costs. It is a bundle of rights in general attached to a physical commodity or service exchanged in the market, as Coase hinted in “The Problem of Social Cost” (1960). This property rights notion was developed further by [Alchian \(1965\)](#), [Demsetz \(1967\)](#), [Barzel \(1989\)](#), and others. In “Towards a Theory of Property Rights” (1967), Demsetz argued that property rights arose when it became the most efficient institutional arrangement in a society, i.e. when its economic benefits surpassed its costs. As [Demsetz \(1967, p. 350\)](#) writes, “property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization. Increased internalization, in the main, results from changes in economic values, changes which stem from the development of new technology and the opening of new markets, changes to which old property rights are poorly attuned. [...] But, given a community’s tastes in this regard [for private versus state ownership], the emergence of new private or state-owned property rights will be in response to changes in technology and relative prices.”

Based on the work of the anthropologist Eleanor Leacock, [Demsetz \(1967, p. 351\)](#) supported this thesis by documenting the case of the Montagnais tribe in Northeast Canada. In the early eighteenth century, this tribe of Indian hunters developed exclusive rights to take beaver furs from hunting grounds - an experience that contrasted with the American Indians in the Southwest who failed to develop well-defined property rights of hunting lands. In his early work on institutional and organizational analysis, North adopted this admitted naive emergence theory of property rights. As [Thráinn Eggertsson](#) put it in his well-known book *Economic Behavior and Institutions* (1990, p. 215), an extensive survey of the New Institutional Economics literature, “[w]e refer to some of these early attempts as the naive theory of property rights because they seek to explain the development of exclusive property rights without explicitly modeling in social and political institutions.” Similarly to property rights, contracts are intrinsically incomplete and costly to measure, define, and enforce. With transaction costs, the institutional framework in which property rights and contracts are measured, defined, and enforced assumes a prominent role in explaining the capacity to capture the gains derived from the division of productive labor and social cooperation through impersonal exchanges. In addition, the transaction costs notion opened a whole new territory regarding the supply and choice of institutions, in particular, a theory of the state that defines the property rights structure and enforces impersonal contractual arrangements and the role of ideology that frames the collective choice of the institutional architecture in a free-riding context.

2. From a serious Marxist and pacifist to a very rigid neoclassical, Chicago-type economist

In 1938, Douglass North enrolled at the University of California at Berkeley. North was born in 1920 in Cambridge, Massachusetts, and he had been accepted into Harvard when he was about to go to college. However, his father was offered the head position of the Metropolitan Life Insurance Company office on the west coast and the family moved to San Francisco. Considering that North did not want to be that far from his family and his brother was at Stanford, he decided to go to Berkeley instead. In 1942, North graduated with a triple major in Philosophy, Political Science, and Economics, getting a C average in all the subjects. The reason was that [North \(2008, p. 199\)](#) led a little leftist protest at Sather Gate in Berkeley during 1940–42.

In his sophomore and junior years at Berkeley, with the social problems of the Great Depression vividly in mind, [North \(2009, pp. 159–60\)](#) became a radical. He discovered the

German philosopher and political economist Karl Marx, becoming a convinced Marxist. “Marx just had answers to everything,” he recalls.

I don't know how anyone could avoid being a radical in those days, as surrounded by problems as we were. And so I drifted into being a Marxist. Not a Communist, a Marxist. That's a big difference. [...] I was a serious student of Marx. I read his *Capital*. Not many people have read that book, but I did. I read lots of Marx. That was a big influence on my life, and it still is. I'm not a Marxist anymore, but still, he had an enormous impact.

In [North's \(1986\)](#) perspective, the great significance of Marx to the study of society is grounded in his grand vision of social evolution based on materialistic historical stages or modes of production. Indeed, Adam Smith and many other proponents of the Scottish Enlightenment had already theorized about the different stages of human material reproduction based upon different modes of subsistence. In Book V of *The Wealth of Nations*, for instance, Smith famously discusses progressive social stages associated with historical means of production. Smith presents these stages as the hunting, pastoral, agrarian, and commercial societies.

However, in North's point of view, Marx's major contribution reverberates in particular to an analysis of the complex dynamic co-evolution of what he called the productive forces (mainly shaped by technology and technical progress) and the relations of production (the institutional social structure conditioned by the political and property rights system). The strength of Marxian theory was to link the materialistic economic processes to political, ideological, and cultural institutions. Indeed, in [North's \(1981, p. 61\)](#) opinion, “[t]he Marxian framework is the most powerful of the existing statements of secular change precisely because it includes all of the elements left out of the neoclassical framework: institutions, property rights, the state, and ideology.” As [North \(2009, p. 159\)](#) would synthesize many years later, Marx's grand influence was realizing all the fundamental right questions, even though Marx and his followers had not very good answers.

With the surprise military attack on Pearl Harbor by Imperial Japan, on December 7, 1941, the United States precipitated its entry into Second World War. Before the war, North hoped to go to law school. However, his plans changed drastically as he graduated from Berkeley in May 1942. [North \(2009, p. 159\)](#) was a resolute pacifist and conscious objector to the war. North adopted an unrelenting and intransigent position that he did not want to kill anybody in the conflict. In consequence, he joined the US Merchant Marine as a cadet. “People could shoot at me but I wouldn't shoot back,” he wrote. In two days of being in the sea, North was called to become a navigator. He was the only one in the crew that went to college so he seemed more suitable to learn the subject of navigation.

In the war years, [North \(1997a, p. 253\)](#) had much free time during his repeated trips from San Francisco to Australia. The same was true when he was sent to the Pacific front lines in New Guinea and the Solomon Islands. Therefore, he was given “the opportunity of three years of continuous reading, and it was in the course of reading that I became convinced that I should be an economist.” In 1944, North was designated as an Instructor in Celo-Navigation at the Maritime Service Officers' School in Alameda, California. The Berkeley economist Paul S. Taylor persuaded North to become an economist. At the same time, documentary photographer Dorothea Lange, Taylor's second wife, persuaded North to become a photographer.

In January 1946, North returned from his military service at the Merchant Marine and applied to graduate school. Given his poor record as an undergraduate student, the only place that agreed to take him for at least one semester was Berkeley. In February 1946, North enrolled in Berkeley for his Ph.D. studies. When he returned to Berkeley, [North \(1997a, p. 254\)](#) had a clear and intense desire to improve the world. To achieve this goal, he needed to understand how the economy worked and could be successful. Then, in the second step, he would have the instruments to improve economic performance. This ambition led him to

study economic history. “My objective as a graduate student,” he recalls, “was to find out what made economies work the way they did or fail to work. Economic history appeared to be the best field for this objective.” In this sense, North (2008, p. 198) states that “I’ve got a single-minded objective. I started out with that view in 1944, and I still have it today; it’s a guiding factor that is still shaping the way I’m trying to evolve.”

As a graduate teaching fellow at Berkeley between 1946 and 1949, North finished his graduate work in the fall of 1950. Interestingly, North (2009, p. 162) decided to research the history of the business that his father wanted that he had followed. He chose to write his Ph.D. dissertation on the history of life insurance companies. As he put it, his “Ph.D. dissertation was a muckraking attack on life insurance companies, something that my father wasn’t enthusiastic about, to put it mildly.” North (2009, p. 163) was supposed to write his dissertation under the supervision of the American economic historian Sanford Mosk. However, Mosk rejected North as his student saying: “North, you’re never going to be any good.” As a result, Melvin Moses Knight (one of two distinguished economists who also were Frank H. Knight’s brothers) turned out to be North’s dissertation adviser and mentor.

M. M. Knight figured highly among the “salty individualists” at the University of California, as described by an obituary (Borah, Davisson, & Mosk, 1988). He was an utterly interdisciplinary character, as North would strive to be in his life project of constructing a truly interdisciplinary social science. Knight emphasized the evolutionary dynamics of the scarcity economic problem imposed on society subject to geographical and resource endowment constraints. In “Water and the Course of Empire in French North Africa” (1928), Knight analyzed “the millennial relation between physical changes in man’s environment and the structure of economic organization from prehistory through the Roman and Arab periods to modern times” (Pontecorvo & Stewart, 1979, p. 242) [5]. In retrospect, North was deeply influenced by Knight’s eclectic and holistic views on the economic approach to history.

As Pontecorvo and Stewart (1979, p. 243) write in their tribute, Knight is a theorist of economic change and thinks “big and long.” He was primarily “preoccupied with the ultimate limits to growth within each economy.” In this sense, Knight differentiates himself from the neoclassical static general equilibrium analysis and the early American institutionalist movement in integrating institutions in the context of the economic problem faced by any society [6]. North (1997a, p. 254) describes Knight as certainly an agnostic about theory. In another place, North (2009, p. 163) says that “Knight didn’t believe in economic theory, but he knew an enormous amount. [. . .] His economic history was story-telling through time. It was very good, endless story-telling. M. M. Knight told damn good stories. I’m still impressed. I learnt a lot from him - but not much theory. Obviously, there was a lot of implicit theory in it, even though he didn’t think so. But there was.”

Despite Knight’s extensive historical and theoretical knowledge and his exciting personality, North questioned the lack of a more rigorous theoretical framework to structure the fundamental process of economic evolution that he and his mentor set out to understand. Indeed, deeply influenced by his French connections, Knight may be classified closer to the French historian Fernand Braudel’s *École des Annales* but with an evolutionary perspective. North (2008, p. 211) states that Knight’s “approach could be called institutional description - rich in historical detail but devoid of explicit theoretical content.” Nevertheless, Knight’s geographical emphasis and implicit regional growth theory will be appropriated and worked out by North within a neoclassical analytical model in his early publications on location theory and export-led regional economic growth. Moreover, some of Knight’s intuitions are surprisingly similar to what North would evolve in his more mature intellectual developments. Pontecorvo and Stewart (1979, pp. 244–5) summarize Knight’s vision of social evolution as follows.

Each society is constrained by its own geographic and resource endowments. Each therefore responds to the problem of scarcity in its own way and creates its own institutions or transforms those it borrows. Regardless of the form of the response, the process of expansion works overtime to use up the opportunity. [...] Once an opportunity is used up, it requires both technological development and a reordering of social institutions to create a new set of human opportunities and this is a formidable social task of the true long run. [...] unlike the essentially optimistic cast of Marxian inevitability, Knight has a strong sense that systems run down and because they are located in space as well as in time, systems that have exhausted themselves do not necessarily get transformed and revived but tend to be replaced, as were Egypt and Rome and North Africa.

In 1950, North was awarded a Social Science Research Council Fellowship to go to the east coast and work on his Ph.D. research. He went back to live in New York, where most life insurance companies were located, including the one of his father. While in New York, North sat in Robert Merton's sociology seminars at Columbia University, making contact with the well-known Harvard sociologist Talcott Parsons. Through Parsons, North (1997a, p. 254) became deeply involved with the Research Center in Entrepreneurial History founded in 1948 and directed by Arthur H. Cole at Harvard. The Austrian economist and social philosopher Joseph A. Schumpeter was an early member and the referential foundational figure of the center [7].

In 1949, the center published the first issue of *Explorations in Entrepreneurial History* (later renamed *Explorations in Economic History*), with the driving theme being the connections between entrepreneurial and business history and economic growth. North was greatly influenced by Schumpeter's view of economic history as embodied in the broad concept of the science of economics or social economics. In his monumental *History of Economic Analysis* (1954, p. 124), Schumpeter argued that the science of economics was composed of four fundamental parts, i.e. economic history, economic theory, economic statistics, and economic sociology. "What distinguishes the 'scientific' economist from all the other people who think, talk, and write about economic topics," Schumpeter wrote, "is a command of techniques that we class under three heads: history, statistics, and 'theory.' The three together make up what we shall call Economic Analysis." This vision was developed by Cole's belief in economic history as centered on the entrepreneurial figure.

In 1950, North published his first article on "Some Recent Views of the Modern Large Corporation" (1950) in *Explorations*. In the fall of 1950, although still working on his thesis, North got his first academic appointment as an Acting Assistant Professor at the University of Washington in Seattle. In the same year, Canadian-born economist Donald F. Gordon also joined the Department of Economics. Nowadays, Gordon (1955a, b, 1974) is known for his critique of Paul A. Samuelson's (1947) operationalism methodology and his research on the neoclassical microfoundations of Keynesian unemployment and the Phillips Curve. Among his colleagues, Gordon was particularly known for his all-around knowledge of economic reasoning and price theory. In Seattle, North and Gordon played chess every day from 12 to 2 p.m. for four years. North reported that he beat Gordon at chess all the time. In the meantime, Gordon taught him economics.

As North (2009, p. 164) recalls, Gordon "taught me economics. I knew so little economics that, when I graduated, I had just memorized all the right answers for the exams and reproduced them. I didn't know any economics, not even simple price theory." North (2008, p. 199) recalls that he got distinguished in his Ph.D. written exams, but he could not answer any simple sophomore-level question in economic theory in the oral exam. This generated a long debate in the faculty about whether to pass him or not. As he re-learned price theory with Gordon, North realized that Marxism was unable "to answer a lot of mundane questions, such as prices." This was the last step to his rejection and final abandonment of Marxism. As a result, in his words, he "became a very rigid neoclassical, Chicago-type economist." However, in contrast with the explanatory power of price theory in some areas, North noted that the

fundamental questions that Marx posed “were still out there and couldn’t be answered by standard economic theory.”

In 1951, North became an Assistant Professor at the University of Washington, Seattle. One year later, in 1952, North completed his Ph.D. dissertation. In his first published works, influenced by his contact with Cole’s Center at Harvard, North focused on expanding and developing his dissertation analysis of major life insurance companies and their close-dependent relationship with investment banking. In 1952, he contributed a chapter on “Capital Accumulation in Life Insurance Between the Civil War and the Investigation of 1905” in William Miller’s edited book, *Men in Business: Essays in the History of Entrepreneurship* (1952). This was followed by an article on “Entrepreneurial Policy and the Internal Organization in Large Life Insurance Companies at the Time of the Armstrong Investigation” (1953) published in *Explorations* and “Life Insurance and Investment Banking at the Time of the Armstrong Investigation” (1954) published in the *Journal of Economic History*.

In the last essay, North (1954, p. 209) explores the investment bankers’ role in the organization of financial institutions “and their significance for the development of these institutions and their reorientation toward the securities market.” North found that the dependent relationship of the big insurance companies with investment bankers explained the financial policy decisions made by these companies. Therefore, the major life insurance companies were neither mere adjuncts nor separable from the banking community. The insurance companies became affiliated with banking houses and their interests because “they required guaranteed outlets for their continuously expanding accumulation of investable funds” and these outlets were controlled by the banking community (e.g. investments in railroads, industries, and public goods). Moreover, the insurance companies and their subsidiaries allowed the banking houses great flexibility in using their funds.

North (1954, pp. 225–6) concludes that the insurance companies occupied a dependent and junior partner role in their association with investment bankers, benefiting from reciprocated services but still not capturing a significant part of the related trade gains. “Their status was that of a junior partner rather than merely a subsidiary. But it was clearly a one-sided arrangement in which the great bulk of the advantages accrued to the investment banker rather than to the insurance company. The officers of the insurance company on the other hand were most handsomely treated by the investment bankers.” Thus, the nature of the association between the major life insurance companies and the banking houses was a relevant explanatory element in the reigning supremacy of the latter.

In 1955, North published his first major article on “Location Theory and Regional Economic Growth” (1955) in the *Journal of Political Economy*. North contends that location theory and the sequences of stages delineated by standard regional economic growth did not provide an empirically validated framework to analyze American economic history. The typical regional economic growth theory, e.g. as exposed by the Harvard-trained economist Hoover (1937) and the German economist Lösch (1938), describes a sequence of stages of a region’s development from a self-sufficient subsistence region to an economy specialized in tertiary exporting industries. Indeed, location theory mainly formulated this sequence based on the stylized historical experience of European economic growth that started with subsistence local economies linked with the manorial system.

Such experience is significantly different from American development. Since its beginnings, North (1955, p. 245) argues, subsistence was only a frontier condition. “America was exploited in large part as a capitalist venture. Settlement in new regions and their subsequent growth were shaped by the search for and exploitation of goods in demand on world markets.” Therefore, “location theorists and the early stages in the theory of regional economic growth appear to be taken uncritically from European experience rather than derived from” the American economic history (p. 247). In North’s opinion, a more

productive framework was developed by the Canadian economist Harold Innis' "staple thesis." Innis (1920, 1933, 1940) attempted to structure Canadian social, political, and economic development history as decisively shaped by a sequence of exporting staples commodities (e.g. fur, fish, lumber, wheat, coal, and metals). North (p. 257) sustains that "the concept of a region should be redefined to point out that the unifying cohesion to a region, over and beyond geographic similarities, is its development around a common export base."

On this ground, North proposed a new analytical framework for regional economic growth from which he constructed his staple (defined as the chief commodity produced by a region) neoclassical theory of economic growth. According to North (1955, p. 257), "[t]he success of the export base has been the determining factor in the rate of growth of regions. Therefore, in order to understand this growth, we must examine the locational factors that have enabled the staples to develop." The export base also determines the development of residentiary secondary and tertiary activities as domestic income grows and investment flows to subsidiary industries. He defines four types of manufacturing that can be developed as a result of increased residential income: (1) materials-oriented industries, (2) service industries to the export industry, (3) residential industries oriented to local consumption, and (4) footloose industries (i.e. where transportation costs are not a significant component in location).

Except for the footloose industries, North (1955, p. 253) maintains that all other manufacturing industries "develop naturally because of locational advantages in a society responsive to profit-maximizing stimuli. There is nothing difficult about the development of such industries. The difficulties arise when promoters seek to develop industries which simply are unsuited for the area and which can therefore only be maintained under hothouse conditions." Moreover, the export base also directs local political pressures that provide for concerted collective action toward reducing transportation costs, improving technological progress in connection with the export base, and mobilizing state and federal supply of public goods and social overhead benefits. These elements will establish the possibilities for economic growth and, in consequence, the widening of the export base as the region develops until the point at which the export base ceases to be identified as a region.

One main implication of this theory is that the view of standard regional economic growth that industrialization is a difficult but necessary and indispensable condition for sustained economic development is not maintained. *Au contraire*, North (1955, p. 254) concludes that, first, "there is no reason why all regions must industrialize in order to continue to grow." Second, a "great deal of secondary (and tertiary) industry will develop automatically either because of locational advantages" or as a result of the induced investment of the growing income derived from the export base. Third, the concept of industrialization *per se* is ambiguous and needs further clarification. In North's (p. 257) view, in short, industrialization "may be neither necessary nor desirable." "There is nothing to prevent population and per capita income from growing in a region whose export base is agricultural. Moreover, there is nothing difficult about developing secondary and tertiary industries in such a region. Indeed, it will develop automatically."

3. The grand theorist of New Economic History

The birth of New Economic History, or cliometrics (a term coined by the Purdue mathematical economist Stanley Reiter based on Clio, the Greek muse of history, and metrics, the art of measurement), is dated in September 1957 [8]. On this occasion, the 24th Conference on Research in Income and Wealth occurred in a joint meeting organized by the Economic History Association (EHA) and the National Bureau of Economic Research (NBER) in Williamstown, Massachusetts. New Economic History, a term created by Douglass North (Hughes, 1982), is the systematic application of economic theory and quantitative methods to

the field of economic history, with particular reference to testing alternative hypotheses in interpreting historical data. It emphasizes the construction and specification of historical models derived from economic theory such that its logical implications can be refutable by empirical testing [9].

The Swedish political economist and economic historian Eli F. Heckscher was the first to assert the essential role of economic theory in the historical treatments of economic phenomena in his “A Plea for Theory in Economy History” (1929). According to Heckscher (1929, p. 526), since the economic problem is fundamentally the same in all ages, “it is difficult to escape the conclusion that economic theory can be of value to the understanding of economic phenomena at all stages of human development.” This conclusion is valid even though different institutional engines were employed to solve the same economic problem. Thus, Heckscher continues, we must “repudiate the idea of economic theory and Economic History as belonging to different stages of human development; they are both essential to an understanding of all periods of history, including the present one.”

According to Heckscher (1929, p. 529), economics is not concerned with any particular set of external facts but it is a point of view. Therefore, economic theory is indispensable to the very choice of historical facts and, more importantly, to the explanation of these facts. Similarly to Heckscher, in his inaugural lecture at the London School of Economics, British economic historian Ashton (1946) vividly argued for economic historians to walk with both feet of deduction and induction in their scientific craft. In this context, for instance, Ashton’s celebrated book on *The Industrial Revolution, 1760–1830* (1948) and Walt W. Rostow’s book on the *British Economy of the Nineteenth Century* (1948) were earlier efforts to apply in a systematic fashion economic analysis to historical phenomena of the past. Regarding the emphasis on quantitative measurement in economic history, we can trace back the cliometric approach to the pioneering work of the British economic historian John Clapham, who in 1928 became the first Professor of Economic History at Cambridge University.

Indeed, Clapham’s three-volume book *An Economic History of Modern Britain* (1926–1938) was seminal in its quantitative *modus operandi* to economic history. In 1929, in addition, the International Scientific Committee on Price History was created by William H. Beveridge and Edwin Francis Gay with a grant from the Rockefeller Foundation (see Cole & Crandall, 1964). In the 1930s, this international collaborative project gave birth to a series of books including, but not limited to, Earl J. Hamilton’s work on Spain (1934, 1936), Henri Hauser’s work on France (1936), Arthur H. Cole’s work on the United States (1938), Alfred F. Pribram’s work on Austria (1938), Beveridge’s work on England (1939), and Nicolaas W. Posthumus’s work on Holland (1943). As already mentioned, in connection with the discussion above, the work of the Center in Entrepreneurial History at Harvard under Cole’s leadership was, as North (1968c, p. 468) writes, “an early (and perhaps premature) attempt to synthesize the social sciences in order to establish a more comprehensive theoretical framework for economic historians.”

With the end of Second World War, the renewed and growing interest of the economic profession in economic growth, the formalistic revolution allied with the rise of econometric techniques, and a massive volume of new quantitative statistics and information about the past economies led to a pressure of change in the state of economic history. In the late 1950s, influenced by the dominant positivism in the philosophy of science, Meyer and Conrad (1957) published their significant paper dealing with historical causality and explanation in a stochastic universe. They discuss how economic theory, statistical inference, and general laws of causality could be applied in the form of historical hypotheses stated in objective probabilistic terms in economic historiography.

In 1956, North was invited by Solomon Fabricant, then Director of Research, to be a research associate for that academic year at the NBER. Fabricant encouraged North to spend one day a week with Simon Kuznets in Baltimore, while North was working on new estimates

of the US balance of payments in the 19th century. Kuznets carried Wesley C. Mitchell's torch in the NBER empirical research tradition, especially regarding the US national-income accounts. In 1936, Kuznets was the head behind the creation of the annual Conference on Research in Income and Wealth, establishing an international organization counterpart in 1947. Previous work by economists and statisticians produced in the Bureau was pivotal to the cliometric turn in economic history [10]. The EHA/NBER joint conference assembled a proceedings book edited by William Parker, *Trends in the American Economy in the Nineteenth Century* (1960). In the volume, new quantitative economic data for the 19th century United States were provided, such as commodity output, regional income, wage series, prices index, factor shares, and North's (1960a) contribution to the revised estimates of the balance of payments from 1790 to 1860.

The 1957 joint conference was the beginning of New Economic History. However, this research program coalesced when Lance Davis and Jonathan Hughes, two of North's most famous students and who were in his first class at Washington, organized the first annual "Conference on the Application of Economic Theory and Quantitative Techniques to Problems of History" at Purdue University in February 1960. In this meeting, for instance, Fogel (1964) presented the initial estimations of his classic work on the interregional social savings of the railroads based on the most important innovation of cliometrics, the counterfactual methodology. Furthermore, from 1960 to 1966, North and Parker assumed the editorship of the *Journal of Economic History*, the EHA's scholarly journal [11]. Both promoted the cliometric revolution in the editorship policy and accepted articles [12]. In 1983, the Purdue annual meetings formally originated the Cliometric Society, organized by Sam Williamson and Deirdre N. McCloskey.

Claudia Goldin (1995, p. 195) classifies North as the "grand theorist" of New Economic History, "arbitrating between economic history and organization theory." Indeed, North (1955, pp. 243–4) writes presaging words regarding his emerging ideas on applying economic analysis to history. He asserts that "there is a vast difference between the response of an underdeveloped area where the social and economic structure is not fundamentally geared to capitalist stimuli and the kind of response one can expect in a basically capitalist society." Thus, in his view, for analyzing American growth neoclassical economic theory seems perfectly fitted. However, when dealing with European economic history, underdeveloped regions, and different institutional arrangements throughout history, the application of neoclassical economics can be severely limited. Surprisingly, North is not only very conscious of the potential benefits of this theoretical transposition but he was also aware of its *prima facie* limitations in explaining most of the global economic history.

The reluctance of the economic historian to make more extensive use of the tools of the theorist reflects in good part the fact that most of the world's economic history falls outside our first condition [i.e. falls outside of market institutions] and that therefore economic theory is of little use in analyzing a large part of its development. On the other hand, the joint efforts of economic theorists and historians applied to the development of the United States and of some other areas hold out the promise of yielding valuable insights.

Indeed, this is the research project that North undertook in the remaining 1950s, culminating in his first book on *The Economic Growth of the United States, 1790–1860* (1961a). The project involved first a comprehensive collection and estimation of new quantitative data. Some examples are his quantitative work on international trade and capital flows (North, 1956b, 1960b, c), domestic inter-regional trade, transportation costs with particular reference to ocean freight rates and shipping earnings (North, 1958b; North & Heston, 1960), and aggregate macroeconomic indicators (North, 1961d). The analysis was expanded and developed in his second book on *Growth and Welfare in the American Past: A New Economic History* (1966), spanning from 1600 to the present day. This last book had several revised

editions incorporating North's later theoretical developments. In this section, we reconstruct North's path to interpreting American economic history in the late 1950s and early 1960s.

In 1956, North (1956a, p. 165) reacted to Charles Tiebout's (1956) critique of his model regarding the role of the export base in determining regional income and employment. In response, North states that his goal was explicitly concerned with long-run secular economic growth, reaffirming the importance of a region as a unit of analysis. He insists that the "region's significance lies in its being a specialized part of the whole," with different regions having different factor endowments and transportation costs. In his view, America's growth was initiated by its large "land and natural resources capable of producing extractive goods in demand in existing markets." With technological progress, changing factor combinations, and growing domestic income, manufacturing became a profitable activity attracting capital and labor. As the residential industry mainly depends on income within the region, it can only expand in an induced form by income generated in exports to already established foreign markets. "Therefore, increased investment in residentiary activity is primarily induced investment as a result of expanded income received from outside the region, and, correspondingly, expanded employment in locally oriented industry, trade, and service primarily reflects long-run changes in income received from the export base" (North, 1956a, p. 165).

In "A Note on Professor Rostow's 'Take-off' into Self-Sustained Economic Growth" (1958a), North critically addressed the validity of the Rostovian stages model of economic growth with a particular reference to the United States (for the full-worked model, see Rostow, 1960). Rostow (1956, p. 47) defined the take-off as the rise in the rate of investment from 5 to 10% or more of national income, the development and accelerated growth of manufacturing industries, and the change in production techniques in such a form that perpetuates the new scale of investment and income. In sum, "the take-off is defined as an industrial revolution, tied directly to radical changes in methods of production." Rostow (1956, p. 31) categorized the American take-off as occurring in the 1843–60 period, stimulated by capital imports. In the 1840s, the first growth cycle derived from the railroads and manufacturing industries in the East. In the 1850s, the second moment was due to railroad expansion into the Midwest.

However, North (1958a, p. 70) notes that "expansion in the east in the 1840s was accomplished without any significant capital imports." Moreover, "(1) the boom in the midwest was well underway at the end of the 1840s before any significant amount of capital was imported and (2) the total capital imports for the entire period 1847–60 were very modest." In contrast, he argues that it was the expanded foreign demand for wheat starting in 1846 which "led to a revival in westward expansion and stimulus to extension of railroads." North reached this conclusion using the existing estimates of the United States' balance of payments - and it did not change after he revised the numbers for the 1789–1860 period. North does not argue that capital imports were not relevant to American growth in the period. Indeed, he maintained that these capital flows increased investment into railroads and helped to finance the balance of payments in some periods (see North, 1956b).

However, in North's (1958a, pp. 71–2) view, "this is very different from saying that they set-off industrialization" or that they triggered the Rostovian take-off. Furthermore, he claimed that Rostow overestimated the role played by the railroads in the 1850s in developing new and expanding exporting sectors (presumably, wheat and flour). Instead, until the Civil War, cotton in the South drove American export expansion [13]. According to North, Rostow's stages model places a set of pre-conditions on industrialization and wrongly equates industrialization with take-off. In acquisitive societies, Rostow (1956, p. 28) argues that the "take-off fails to occur mainly because the comparative advantage of exploiting productive land and other natural resources delays the time when self-reinforcing industrial growth can profitably take place." However, North contrasts Rostow's hypothesis with American economic history, particularly with New England's take-off experience that began

in 1820. New England's textile industry development was possible primarily because of the expanding demand outside the region, greatly influenced by the expansion in income from cotton in the South and wheat, corn, and livestock in the West.

In other words, American economic history supports a very different picture than the one that Rostow's model suggests [14]. The same is true for other countries, such as Canada. In 1958, North (1958b) also published an influential study on ocean freight rates spanning the 1790–1913 period. In this paper, he analyzes new data on ocean freight rates regarding wheat and timber that revealed a long secular decline tendency. North maintained that it only could be explained by technological progress in ship construction. Moreover, he emphasizes the crucial contribution of external economies, the expansion and widening of global export markets, and the role of European immigration in better capacity utilization and round-trips.

In "Agriculture in Regional Economic Growth" (1959), North develops and intertwines these themes and the industry-agriculture dichotomy in regional economic growth, acknowledging that his 1955 model was incomplete. More precisely, the staple export base expansion is a necessary but not sufficient condition for regional development. As taught by Adam Smith, economic growth is determined by productive specialization and social cooperation under the division of labor and knowledge. Production for sale in external markets is the way paved by new regions in their economic development. The division of labor is limited by the extent of the market (see also Stigler, 1951). Nevertheless, a region can remain tied to a single export staple, not diversifying its productive base and not sustaining manufacturing industries, urbanization, and economic growth. This trap can be explained, in North's (1959, p. 945) vision, by three reasons: (1) the natural endowments of the region (at any given level of technology), (2) the character of the export industry, and (3) changes in technology and transfer costs. In this argument, North (1959, p. 946) is deeply influenced by Baldwin's (1956) discussion on the nature of the export production function, framed by technological and institutional factors. Baldwin compares two economies, an intensive and a non-intensive production economy.

In the intensive production economy, generally associated with plantation-type commodities (such as cotton), the production function is labor-intensive and marked by increasing returns. In the 19th century period, the optimum available organizational structure to exploit these products was large agricultural states concentrated in the plantation house. Those demand bulk capital investments. In the non-intensive economy, export commodities are generally produced in the most efficient form on family-size farms and the production function is relatively less labor-intensive. North extends this analysis by incorporating geographical patterns, natural endowments, and changes in technology and transportation costs. Therefore, the natural endowments initially determine the potential private rate of return for different economic activities. If the production possibilities are of such a nature that one commodity has a much higher return rate than any other economic good or service, productive investment and economic expansion will tend to concentrate on this export commodity. The growth spurring in the region will not necessarily be accompanied by productive structural changes.

The disposition of income from the export industry, the region's propensity to import, and the magnitude of the regional multiplier-accelerator effect are a function of the most efficient organizational arrangement to explore the local comparative advantage and the commodity in which the export base evolves. In the case of a plantation export industry, which exhibits increasing returns to scale in certain margins and is relatively labor intensive, North (1959, p. 946) sustains that regional economic growth will result in a concentrated and unequal income distribution. The bulk of the population will spend their income on basic foodstuff and subsistence demands. In contrast, the ruling class of "plantation owners will tend to spend most of their income upon luxury consumption goods which will be imported [15]."

This unequal demand pattern obstructs the inducing investment derived from the export base income growth, positively reinforcing the system dynamics around one export staple commodity. Investment and technological progress will flow to explore the plantation more efficiently. Plantation-type commodities require only a limited number of places for product collecting and exporting. The political coalition in power composed of property owners will be reluctant to invest in human capital, technology, and research and development. Thus, regional growth tends to be trapped in its primary exporting economic structure, not discovering, developing, and improving its comparative position in other sectors through active investment in education and knowledge.

On the other hand, a region can present broad production possibilities such that the potential rate of return of different goods and services is not so distant from the initial export commodity that constitutes the regional comparative advantage. In this context, the development of the staple export base takes place *pari passu* with the creation of new domestic segments and the broadening of the exporting sector. A staple export base that is most efficiently produced on a family-sized farm and in which labor is relatively scarce, especially compared to land, results in a more equal income distribution and the encouragement of new economic activities. The region will tend to improve its comparative position through public investments in education and research, broadening the resultant economic base.

The inherent features of transportation costs can considerably influence the regional economic structure and export base. Technical change and its impacts on transportation costs can alter or deepen regional comparative advantage by increasing or decreasing the potential private rate of return of other goods and services. North notes that an early transportation development that helps to evolve the initial comparative advantage in a determinate staple base will tend to reinforce the dependence on it, creating positive feedback and increasing the potential return of the *status quo* export base. Moreover, in new regions, transportation is, to a great extent, only one way. The outward shipment of a bulky, standardized commodity has no counterpart in an inward shipment. Thus, inward freight tends to be very low, so import goods competition prevents the creation and development of domestic industries. This reinforces the high import propensity picture described in the plantation economy.

North (1959, p. 948) illustrates the two economies delineated above by contrasting the development of the South and West until the American Civil War. From the War of 1812 to the Civil War, the South was a major force of growth with the cotton export base and other subsidiary plantation commodities (such as rice, sugar, and tobacco). Indeed, cotton was the most relevant component of US exports in the period. In the West, an expanding export base developed in wheat, corn, and its derivatives (pork bacon, flour, and whisky). First, the Southern economy was largely concentrated on its dominant single staple exporting base due to its immense comparative advantage. In contrast, the potential return in the West was much more equivalent in different economic activities. Second, given the natural endowments and technology that framed the potential return rates, the most efficient organization in the South was the large-scale plantation reinforced by slavery. In the West, the most efficient social organization to produce wheat and corn at the time was the family-size farm.

These different institutions built for economic exploration of comparative advantages resulted in different patterns of income distribution and consumer demand in the South (extremely concentrated) and the West (more equal). Therefore, the South remained largely apart from the market economy and urban developments. In contrast, the West could grow a myriad of domestic industries devoted to residential demand that eventually matured to become leading exporting industries. Since the cotton trade had such a tremendous return rate, the Southern economy did not produce investment in education, human capital, and technical progress (even within the white population). Thus, the Southern economy exported

cotton to the North and Britain. With its interregional trade receipts, it purchased for the most part foodstuffs from the Midwest and industrial goods from the North. With its British trade receipts, the South purchased European luxury goods. Nevertheless, some economic historians contested some elements of this argument, noting that the Southern plantation farms were self-sufficient in food (e.g. see [Goldin, 1995](#), p. 199).

Third, [North \(1959, p. 948\)](#) adds, “[n]either transportation development or extensive subsidiary industry were required” for the economic efficiency of the exporting cotton trade. “The Factor with his ties with northern credit and shipping served as both the exporter of the planter’s cotton, and importer of his foodstuff (from the West) and manufactures (from the Northeast and Europe). Large-scale investment in the South was devoted solely to the opening up of new cotton lands and the acquisition of slaves.” In contrast, the substantial investments in railroads and other commutation means in the West were paramount in its formation. The ruling exporting commodities in the West had significant locational gains in the processing and manufacturing of its derivatives. In consequence, [North \(1959, p. 948\)](#) writes, “a variety of such manufacturing grew up and promoted urban development in the West.” Fourth, the idiosyncratic characteristics of the ocean freight trade prospected by the one-way cargoes of cotton inhibited the diversification of local industries (a theme developed in [North, 1958b](#)). In the West, the great distances and transportation costs naturally protected manufacturing production for local consumption.

According to [North \(1959, p. 951\)](#), the quest for economic growth should not be reduced in the simple formula associated with industrialization, as in the Rostovian model or in the form of the view propagated by [Galbraith \(1951\)](#) that equates agriculture with stagnation. This simple view could not explain many cases of regional growth in economic history, such as the Midwest from 1815–1860, the Pacific Northwest from 1880–1920, and California from 1848–1900. Indeed, this view is also present in some readings of Arthur [Lewis’ \(1954\)](#) dual-sector model, in which the capitalist modern sector is defined or understood as the industrial sector, and the non-capitalist traditional subsistence sector is equated with agricultural activities. The relevant point is not “agriculture versus industrialization but rather revolves around a region’s ability to become integrated into the larger markets of the world through exports, and of the resultant structure of the regional economy which will influence its ability to achieve sustained growth and a diversified pattern of economic activity.”

The co-evolution of factor endowments and initial conditions, institutions, and different paths of development explain the different economic dynamics of Latin and North America, as developed by the influential work of [Engerman and Sokoloff \(1997, 2000\)](#) and [Acemoglu, Johnson, and Robinson \(2001\)](#). In Book IV of *The Wealth of Nations*, [Smith \(1776, p. 209\)](#) was the first to distinguish between the qualitative difference between a settlement colony versus a purely extractive colony in his chapter VII “On Colonies.” In particular, Smith recognizes a major opposition between the Greek and Roman colonies. The Greek colonies were treated as “emancipated children,” over whom the mother city “pretended to claim no direct authority or jurisdiction.” On the other hand, the Roman colonies were subordinated and seen as a revenue source for the Empire, hampering its economic development [16].

In *The Economic Growth of the United States, 1790–1860 (1961a)*, North’s seminal contribution can be divided into two distinct but interconnected parts. First, it is a product of extensive data collection and primary empirical work made during the 1950s. Second, North frames all the quantitative work within his staple export-led “skeletal framework,” which is primarily designed to interpret the process of American economic growth in the antebellum period. This analytical framework is a composite of three components. The first is Adam Smith’s central proposition that specialization and exchange within market coordination are the driving forces of economic growth. Thus, the crucial importance of external trade in extending the market - which set the upper limit to the division of labor. Moreover, there is Innis’s staple hypothesis with its emphasis on external trade and the regional export base. It

connects with Smith's proposition. Indeed, Innis's hypothesis can be traced to Smith's vent for surplus approach. Finally, Callender's (1902) classic three-region model of interregional trade exerted a profound influence. As North (1961a, p. vi) writes in the preface, "I am in his [Callender's] debt."

Callender's classic article on "Early Transportation and Banking Enterprises of the States in Relation to the Growth of Corporations" (1902) delineates an interregional specialization model composed of a manufacturing Northeast, a cotton export base in the South, and a food-producing Northwest. In this way, each region realized its comparative advantage, capturing specialization and exchange gains, but subject to transportation costs and an underdeveloped financial system. In his book, North (1961a) focuses attention on the process of incorporating production factors into the realm of inter-regional specialization coordinated by the market price mechanism. In their turn, utility-maximizing individuals adjusted to the market relative price changes, leading to more efficient resource allocations and inducing institutional innovations.

In addition, depending on the natural endowments of the region and the character of the export industry, individuals responding to the profit opportunities signaled by the price system would tend to organize concerted collective action toward reducing transportation costs, social overhead capital, education, and technological progress. The book is founded on the proposition that the process of American economic growth is

the evolution of a market economy where the behavior or prices of goods, services, and productive factors was the major element in any explanation of economic change. Institutions and political policies have certainly been influential. They have acted to accelerate or retard growth on many occasions in our past, primarily by affecting the behavior of the prices of goods, services, or productive factors either directly or indirectly. But they have modified rather than replaced the underlying forces of a market economy (North, 1961a, p. vii).

In June 1961, in the context of the Alliance for Progress agreement, North was sent to Brazil by John F. Kennedy on a mission organized by the US Department of State and the Brazilian Economic Institute (IBRE) of the Getulio Vargas Foundation (FGV). Invited by North (1961c) gave four "Lectures in Regional Economic Analysis," presented at the Vargas Foundation and published as "O Crescimento Econômico Regional" in *Revista Brasileira de Economia*. North's mission was to evaluate the industrial development plans in the Brazilian Northeast conducted by the Superintendência do Desenvolvimento do Nordeste (Sudene), created and directed by the Brazilian economist Celso Furtado. The result was North's *Analysis of the new Sudene Five Year Plan for the Development of the Northeast* (North, 1961b), a detailed critique of Sudene's First General Plan written by Furtado himself (Boianovsky & Monastério, 2018; see also Boianovsky, 2018).

On June 20, North met Furtado in Sudene's headquarters at Recife, Pernambuco. North's main critical points concentrated on the population problem faced in the Northeast regions in the context of droughts and water insecurity, recommending the migration to proximate regions that did not have water scarcity. In addition, North criticized the industrialization proposals based on Furtado's claim of low agricultural productivity in the Northeast region in comparison to the Center-South region. Along the lines of Lewis' dual-sector model, Furtado proposed that industrialization was the only way to solve the population excess (i.e. unlimited labor supply) and to develop the Northeast region [17]. In contrast, North maintained that the Brazilian Northeast lacked market extension and economies of scale, qualified labor, and natural resources for industrialization.

Nevertheless, as Boianovsky (2009) argues, there are interesting parallels between North and Furtado. Both economists struggled to understand the causes of development and underdevelopment in the New World contrasting experiences, namely, the economic success in North America and the sources of stagnation in Latin American countries. Both also

stressed the pivotal role of exports in the development paths in Brazil and the United States, calling attention to the decisive role of factor endowments and initial conditions, which contributed to the nature of established colonial rules that perpetuated divergent long-run growth processes. In his classic work on *Formação Econômica do Brasil*, translated in 1963 as *The Economic Growth of Brazil*, Furtado (1959) Furtado ([1959] 1963) was probably influenced by North (1955) in his analysis of the role of cotton in American economic growth in the 19th century and the genesis of divergent economic paths between the United States and Brazil. As North deepened his research on structures and social change, preoccupations already present in his mentor Knight, he arguably became closer to Furtado's structuralist approach [18].

4. An aborted revolution? The rise and fall of New Economic History

In an interview regarding the New Economic History uprising, North (2008, pp. 197–8) judges that “[w]hat we did then was impressive enough to be called a revolution, but the failure to go on to deal with the two major shortcomings of neoclassical economic theory applied to history have aborted the revolution.” In his view, the first major shortcoming is modeling political and economic market imperfections and frictions, particularly failures relating to imperfect knowledge. Imperfect knowledge (such as measuring costs) is a paramount determinant in transaction costs. The second major shortcoming, he continues, is that “economic history is about *change through time*, and economic historians have simply not addressed that difficult but essential problem.”

In the early 1960s, North was the torchbearer of New Economic History. In the event of the publication of the new and revised *Historical Statistics of the United States* by the US Census, North (1963, p. 128) pays tribute to the new quantitative work on the US economy produced in the 1957 EHA/NBER joint conference. “A revolution is taking place in economic history in the United States,” he writes. The revolution has been carried through by “a new generation of economic historians who are both skeptical of traditional interpretations of US economic history and convinced that a new economic history must be firmly grounded in sound statistical data.” During this revolutionary process, many accepted truths of American economic history held sacred by historians had been destroyed in mere cursory theoretical examinations and empirical statistical analysis.

According to North (1963, p. 129), for instance, the widespread truth of the unprofitability of slavery in the antebellum South is simply inconsistent with elementary neoclassical price theory. In addition, Conrad and Meyer (1958) provided an empirical refutation of this proposition. Other myths refuted by early cliometric research are the indispensable role of the railroads in 19th century American development (Fogel, 1964) and the importance of the Civil War in accelerating US industrialization (Cochran, 1961; North, 1961a). In the 1960s and 1970s, the demand by economics departments for economic historians trained under the rigors of neoclassical economic theory and econometric quantitative analysis provided the market test testimony of the cliometric revolution. As North (2008, p. 198) recalls, “[i]n the 1960s, if my students didn't have six job offers, I thought they were really doing terribly. [. . .] So it was an extraordinary rapid revolution, and it was a revolution, you're darned right it was a revolution [19].”

Nevertheless this sweeping scientific and professional success, the cliometric revolution had a much more difficult task in reaching positive and insightful theoretical conclusions. In North's (1963, p. 129) view, New Economic History only scratched the surface of the Smithian grand social and economic problem. One of the few positive conclusions arrived at the time is the role of cotton and interregional trade in American growth as developed by North's neoclassical staple export model. As he put it, “[t]he tools of the economist provide initial hypotheses to explore a wide range of questions posed by the economic historian, but for

those concerned with the great question of the economic rise and fall of nations the fare is still thin." Two years after this initial evaluation and introspection within the New Economic History revolution, North adopted a deep critical tone toward his peers and the profession in general in an article on "The State of Economic History" (1965, p. 90). In his view, (1) "the quality of research in economic history is generally very poor" and "the economics profession must take a large share of the blame [20]." In addition, New Economic History cannot be excluded from being part of this poor-quality *status quo*. Lacking theoretical and sociological imagination, (2) "the new economic history falls short of the mark in remedying this [quality of research] problem."

According to North (1965, p. 90), the results of the New Economic History "have been generally disappointing. Too much of it has been dull and unimaginative, and there seems to be a widespread conviction that econometric techniques, the computer, and running a few regressions can substitute for theory and imagination. Some of the new economic history written by economists is of distressingly poor quality. Some of it is so imprecise and fuzzy as to make it difficult, if not impossible, to make any model at all." Indeed, this fact is most troublesome and can be somewhat sound paradoxical since making a specified model that is potentially testable and refutable is the cliometric innovation to economic history. North (1965, p. 91) concludes that "it is my conviction that we need to sweep out the door a good deal of the old economic history, to improve the quality of the new economic history," and to strive for economic history discipline to achieve the same rigorous standard expected in other areas of economics.

In the late 1960s and early 1970s, North's latent and emerging dissatisfaction with the developments of cliometrics was gaining increasing *momentum* (cf. North, 1997b). The apotheosis of this inner reflection process is delineated in his 1973 presidential address to the Economic History Association, entitled "Beyond the New Economic History" (1974). In this address, North (1974, p. 1) invites his peers to go beyond the traditional limits imposed by neoclassical economic theory in historical research. He argues that the most significant innovation of New Economic History, i.e. the systematic use of economic theory and quantitative methods in history, is also its fundamental constraint. Therefore, although the standard neoclassical theory "has provided the incisive new insights into man's economic past," it "also serves to limit the range of inquiry" of economic historians. In this sense, he complains that his "former revolutionary compatriots show distressing signs of complacency with the new orthodoxy." As North (1977a, p. 197) writes in another place,

the revolutionary spirit which infused the little band of scholars who met annually in the dead of winter in the frozen wastes of Lafayette, Indiana, in the early 1960s is clearly lacking today even though the annual cliometric conferences continue (albeit in Madison, Wisconsin, in springtime). The problem is straightforward. Most of the new economic historians are still attempting to ape their colleagues.

In his presidential address, North (1974, p. 2) points to five considerable limitations of New Economic History as a *modus operandi* to historical research. First, "[t]he research has been more destructive than constructive." New Economic History had a good track record of historical myth-busting, but it did not replace the old truths with a systematic explanation of economic change. Second, the research was mostly "on specific issues or institutions, but little light has been shed on the long-run transformation of economic systems - that is, long-run economic growth." Third, "[t]here is no role for government in the analysis except as it is brought in an *ad hoc* fashion." Fourth, it does not account for the other three sources of decision-making outside the market process, i.e. the household, organizations (such as firms), and government. Neither neoclassical economic theory accounts for the different combinations throughout time of these decision-making units. Fifth, "it is curiously unteachable at the undergraduate level [21]."

As North (1974, p. 3) readily acknowledges, most or all of these limitations are intrinsic to the standard neoclassical theoretical framework. This fact is understandable when we consider that neoclassical economics “was not designed to explain long-run economic change.” Indeed, neoclassical economics is primarily an individual rational choice theory within specified constraints, whereas economic history is about the secular changes in those constraints. Hence, in a general equilibrium world, an economy is characterized by the equality of all different subjective and objective marginal substitution rates, resulting in an optimum resource allocation equilibrium state. We are in the formal similarity world in which all societies must deal with the economic allocation problem imposed by scarcity. Welfare economics derived from this theory implies that economic growth should be inevitable and trivial, given certain assumptions on savings and population dynamics.

As a brief detour, one may ask how North could reconcile the *prima facie* antagonism between the individual rational choice analysis within defined constraints and his vision of economic history as necessarily encompassing secular changes in those specified constraints that shape human action through time. Therefore, although North criticized the neoclassical general equilibrium theory from the mid-1970s onwards, he still used the rational choice framework in his subsequent works (e.g. in his 1981 book on *Structure and Change*). This tension is attenuated if we understand the nature of the pure logic of choice in an individual choice computation equilibrium and its connections with rational choice analysis and neoclassical general equilibrium theory. The rationality principle denotes that people maximize their scarce means to achieve different and conflicted ends in light of their subjective contextual evaluations and perceptions. This method is what the Austrian philosopher of science Popper (1976) called situation analysis.

In this stage, nothing is said about whether the individual subjective interpretations of the world are true. In standard general equilibrium theory, however, neoclassical economics assumes that individuals have perfect and objective knowledge. The subjective element of situational analysis is lost because the inquiry focuses on the final state of general equilibrium. However, in the social coordination problem that every society faces, as the Austrian economist and social philosopher Hayek (1937) famously clarified, there are conflicting subjective expectations about external reality. An individual action plan will necessarily need to coordinate itself with the plans of other individuals and the external world. Thus, utilizing the subjective rational choice framework is not equivalent to employing the objective utility-maximizing hypothesis or the standard general equilibrium theory. In a world of instrumental objective rationality, institutions are unnecessary [22].

Moreover, even regarding the question that the neoclassical economic theory was designed to answer, i.e. the decentralized individual choice computation and the market static resource allocation, it provides limited answers confined to a world where the assumptions of standard general equilibrium theory apply. That is a world of complete markets with complete knowledge and perfect competition (the latter defined by perfect information, price-taking actors, and the absence of externalities). In other words, this is a world of zero transaction costs, i.e. zero costs of specifying, measuring, enforcing, and coordinating property rights and contracts among individuals. Given this state of affairs, North (1974, p. 4) writes that one radical alternative is to “throw out neoclassical theory and start all over again.” However, another alternative and preferable solution is to broaden the neoclassical framework to include all those missing analytical parts for a systematic theory of institutional structures and economic change, maintaining the basic assumption of utility-maximizing behavior and the consequent price theory analysis.

Therefore, North (1974, p. 6) suggests that the development of household economics (with particular reference to a theory of fertility and the economics of family), a theory of property rights derived from transaction cost economics, and a theory of the state (which involves public choice theory and a theory of ideology) can be amalgamated into a common extended

analytical framework. In particular, transaction costs not only explain the different combinations within economic organizations, such as the decision to buy in the market or to make within the firm. Indeed, since the economic organization is a *continuum* from a purely market voluntary exchange and purely governmental coercion, transaction costs also can open “the door to an explanation of much of the institutional structure of an economic system.”

North (1977a) continued his critical reevaluation of the cliometric movement, comparing it with other schools of historical research, such as the old economic history, the Marxian approach, and the *École des Annales*. As North (1978a, p. 7) points out, the great merit of cliometrics is “its attempt to develop a more scientific history. The explicit use of theoretical models and the systematic use of statistical inference in testing procedures are the most distinctive contributions of this approach.” In other words, North (1977a, p. 190) writes that cliometrics “uses simple theory which can produce predictable and specific results rather than indeterminate consequences.” In this sense, the “explanation entails the application of the principles of scientific explanation derived from the natural sciences.”

According to North (1977a, p. 191), in plain contrast with cliometrics, the old economic history immerses itself in the detailed, context-specific historical reconstruction of the social and economic past. It is mainly concerned with the institutional structure of a society, which provides the multidimensional matrix in which individual actions are constrained and social phenomena formed. Indeed, old economic history also employs theory, as every explanation inevitably does, but “the theory is implicit, frequently internally contradictory, or at odds with basic and widely accepted economic propositions.” In this sense, old economic history is not capable of producing testable specific predictions along the lines of scientific procedures derived from the natural sciences. In the same manner, North (1978a, p. 79) sustains that “the Marxist school cannot be faulted for ignoring the evolving structural aspects of economic systems. Property rights, the state, technology, and ideology have all been a part of Marxist economic history (although typically not demography).” However, Marxian economic history also failed to specify its models and test its hypothesis. Moreover, Marxists have made little additional theoretical and quantitative advances after Marx’s seminal contributions.

In North’s (1978a, p. 80) view, the Annales school cannot be properly classified as a historiographical school in the same way as Marxists and cliometricians since it has not constructed a model. He writes that “Fernand Braudel’s (1949) masterpiece, *Le Monde Méditerranéen*, is not a model on which one can build a school. It is a work of art which, when subject to the critical scrutiny of the cliometrician, becomes a lot of brushstrokes on a canvas. [Emmanuel] Le Roy Ladurie’s *Les Paysans de Languedoc* (1966) is an enormous achievement, but because he misreads [David] Ricardo and confuses rent with profit, much of his economic analysis does not make sense.” Therefore, although Annales scholars have made significant quantitative and statistical contributions, they share their ignorance of standard neoclassical price theory and contempt for testing hypotheses with the Marxist school.

In contrast with old economic history and Marxists, North (1977a, p. 1930) maintains that neoclassical economics naturally assumes that all the institutional specified constraints involved in individual rational choices are exogenously given. However, the *raison d’être* of economic history is to study these institutional structures that frame individual maximizing behavior throughout time and that, in consequence, determines social coordination and economic performance across different societies. In other words, North argues that “[t]he essence of historical explanation is the interplay between the ongoing historically derived constraints and the choices open to the participants.” As a result, “for the economist *qua* economic historian, such an approach [i.e. neoclassical economics] can only result in sterility.” Indeed, as North (1978b, p. 963) concludes in his article on “Structure and Performance: The Task of Economic History,” with the cliometric revolution

[e]conomic history gained in rigor and scientific pretension, but at the expense of exploring a much more fundamental set of questions about the evolving structure of economies that underlies performance. Cliometricians have turned their backs on a long tradition stretching back from Joseph Schumpeter to Karl Marx to Adam Smith. These scholars regarded economic history as essential because it added a dimension to economics. Its purpose was to analyze the parameters held constant by the economist. If economics is a theory of choice subject to specified constraints, a task of economic history was to theorize about those evolving constraints.

5. The first steps in making a New Institutional Economics

In 1966, Douglass North went to live in Geneva, Switzerland, for a year as a Ford Faculty Fellow. In the 1966–67 academic year, he lectured at Oxford, the London School of Economics, Essex, Paris, Caen, and Geneva. During the fellowship, North wrote his book *Growth and Welfare in the American Past: A New Economic History* (1966), planned as an introductory textbook to the cliometric research program. In this work, North used simple price theory and quantitative analysis to challenge the long-time spread views held at the time, favoring his interpretation of American economic development.

Significantly, the first chapter was entitled “Theory, Statistics, and History,” Schumpeter’s three combined techniques that define scientific economic analysis. As North writes, the empirical inquiry is limited only by the existence of appropriate theory and evidence [23]. However, in the same period, he decided to switch from American to European economic history. This change presented him with a great puzzle. As North (2009, p. 165) recalls,

You can write all American economic history using simple price theory. The US has always been a market economy to some extent, one which became more and more a market economy. So just using a simple theory of markets could tell the story of a lot of what had happened in the US alright. But Europe? How could you talk about feudalism and the manorial system with neoclassical theory? This is where I realized that we need to develop a better body of theory to confront the crucial issues. That’s what got me into trying to figure out and understand institutions and all that jazz that I’ve been doing ever since [24].

In his early 1968 contribution to the *Festschrift* in honor of Walter Hoffman, North (1968a, p. 140) advocated “A New Economic History for Europe.” He argued that the cliometric revolution that was “completely transforming the traditional discipline” in the United States was still missing in Europe “because there economic historians are trained as historians and not as economists.” Therefore, North (1968a, p. 147) maintains that “European economic history is in need of fundamental restructuring.” In his view, only by combining “modern economic theory and the development of new theoretical insights, as well as by the imaginative employment” of these insights, we could start to understand the formation and evolution of Western economies and civilization. “Such work can be done only by the new economic historian thoroughly trained in economic theory and statistics.”

However, North (2009, p. 165) would soon find that neoclassical economic theory is wholly inappropriate in dealing with different institutional arrangements dynamics outside the existing market price coordination mechanism. Thus, in applying neoclassical economics to understand European economic developments, he “just couldn’t make sense out of history.” This frustrated attempt made clear in a fundamental fashion the need to go beyond New Economic History and its embodied theoretical framework. In his research on the “Sources of Productivity Changes in Ocean Shipping, 1600–1850” (1968b), North found a promising step to the importance of institutions for productivity evolution. He discovered that ocean shipping costs decreased, particularly in the 19th century, mainly due to total factor productivity gains made by organizational and institutional innovations that reduced piracy and increased round-trips per year, the size of ships, and their load factors.

Observing a maritime museum in the Netherlands, North noted anecdotally that the ships during the 17th to 19th century did not demonstrate any breakthrough technological advancement. Instead, they increasingly carried fewer armaments for protection from pirates and other attack sources. As [North \(1968b, p. 967\)](#) writes, “[t]he conclusion one draws is that the decline of piracy and privateering and the development of markets and international trade shared honors as primary factors in the growth of shipping efficiency over this two-and-a-half-century period.” In this sense, North arrived at the surprising conclusion that technological progress did not play a decisive role in total productivity changes during the period, something that the standard neoclassical growth theory à la Solow-Swan would have predicted. Instead, his findings suggested that technical progress interacts and co-evolves with the institutional environment in co-determining transaction and production costs [\[25\]](#).

According to North, technologically superior vessels such as the Dutch fluyt used in the Baltic were already available long before its modified versions could be economically, safely, and widely employed in ocean shipping. This vessel originated in the 16th century in the Dutch Republic and was designed to maximize cargo space and crew efficiency. In contrast with its contemporary rivals, the Dutch fluyt was not intended to be transformed into a warship. For this reason, the vessel carried twice the cargo managed by a smaller crew and was cheaper to build. The Dutch ships were traveling all along the 17th century in the Atlantic and the Indian Oceans. However, North maintains that these more advanced vessels could not be used predominantly in this period because of piracy, which forced ships to carry more crew members and armaments for defense. From 1814 to 1860, he estimated that the total factor productivity in ocean shipping increased at almost 10 times the rate per year compared to the annual rate in the previous two centuries. The fact that the main component for transaction cost reduction and total factor productivity increase in ocean shipping was reduced piracy led North to develop the first sketch of a theory of institutional innovation using the neoclassical choice-theoretic approach at the margin.

In *Institutional Change and American Economic Growth* (1971), co-authored with his student Lance Davis, North extended the neoclassical economic theory to the choice of rules based on the wealth-maximizing hypothesis and used it to illustrate the institutional innovation process in American economic growth. In the book, [Davis and North \(1971\)](#) aimed to construct a body of theory extending the neoclassical economic analysis to include an explanation of the formation, mutation, and decay of organizational forms in which human social interaction unfolds. Taking as given the institutional environment (the set of fundamental political, social, and legal ground rules) and some exogenous disequilibrating force, the model attempts to predict whether an institutional innovation will be established and at which economic decision unit level this new arrangement will be pushed forward by the relevant action group (purely individual, some form of voluntary cooperation, or the coercive power of government) and their timing. The action group perceives that some potential external or redistributive income can be extracted by altering the institutional structure at the margin through an arrangement innovation process. Potential external income derives from economies of scale, externalities, risk and uncertainty, and market failures such as information costs.

The primary action group innovates through a new arrangement, which can be the direct application of an institutional instrument (such as a document or device) or the creation of a secondary action group on which potential income can be captured. [Davis and North \(1970, 1971\)](#) formalized this process in a lagged supply investment model, where a change in demand caused by an exogenous disequilibrating force in one time period determines the lagged supply of an arrangement innovation to capture the potential rents created by the shock. Thus, the institutional innovation process is an efficient equilibrium outcome in capturing or internalizing potential external or redistributive income. The initial equilibrium

is defined in the lines of general equilibrium analysis. Market prices perfectly incorporate all potential external income. The property rights structure is distributed in such a form that prevails an optimum allocation of scarce resources.

Given the initial equilibrium, potential income from institutional innovation emerges when exogenous shocks create an externality, a restructuring of risks, a shift in transaction costs, or an application of a new technology subject to increasing returns. Costs of operating the *status quo* institutions may also change due to some technological shock (in particular, in military technology) or due to a change in the relative factorial prices. Finally, legal and political shocks can occur in the basic economic environment (such as a drastic change in property rights distribution or a political revolution). The primary action group choice of arrangement innovation is defined as the maximization of the discounted stream of net future income of different arrangement alternatives. Formally, [Davis and North \(1970, p. 140\)](#) define the action group's formulation as:

$$V = -C_o + \frac{[R_1 - (C_r)_1]}{(1+r)} + \frac{[R_2 - (C_r)_2 + C_s]}{(1+r)^2} + \dots + \frac{[R_n - (C_r)_n + C_s]}{(1+r)^n} \quad (1)$$

where V is the discounted present value of the arrangement innovation, C_o is the cost of effecting the new arrangement, R_n is the expected returns that the action group estimate will flow from the new arrangement in year n , C_r is the expected costs of operating the new arrangement in year n , and C_s "is the estimate of the costs of getting stuck with a decision that the members of the action group do not like."

Using this innovation model, [Davis and North \(1971\)](#) argued that a significant part of American economic growth occurred by action groups pursuing profit opportunities by changing and inventing new institutional and organizational arrangements. The authors provide a myriad of examples (such as the evolution of capital markets, railroads, public goods such as canals, general incorporation laws, education, and regulation for the manufacturing sector) in which complementary institutional innovation was indispensable to productivity evolution in the United States. Therefore, for instance, [Davis and North \(1970, p. 144\)](#) argued that "the innovation of the corporation with its unlimited life and limited liability lifts the restrictions on obtaining capital and therefore allows its innovators to reap the profits inherent in the economies of scale."

Moreover, the model also explains the changing public-private economic mix in American economic history as the channel to capture external and redistribution profit opportunities. For example, the entrance of government in canal investment during the 1830s was a rational decision given the absence of developed capital markets. In the same manner, the rise of government in the 20th century results from the relative increase in profit opportunities through income redistribution and divergences between private and social costs associated with urban development, externalities, and public goods [\[26\]](#). Therefore, with the theoretical model that [Davis and North \(1971, pp. 119–120\)](#) built, they argued that

the formation (and mutation and decay) of these organizational forms can now be an integral part of the economic analysis rather than a descriptive addition to the analysis. Moreover, since a great many were realizable without substantial redistribution of income, their formation is at least in principle predictable from the model. Perhaps even more significant than the ability to integrate economic analyses and institutional formation is the implication of this theoretical model for the study of productivity increase. Economic historians have focused on technological change as the source of growth but the development of institutional arrangements from the above-mentioned sources are a major historical source of the improvement in the efficiency of product and factor markets. The development of more efficient economic organization is surely as important a part of the growth of the Western World as is the development of technology, and it is time it received equal

attention. The few cases of which I am aware that have attempted to measure productivity change attributable to improving economic organization certainly support this contention.

One of the main weaknesses of the Davis-North model is the tautological trap of rationalizing every arrangement innovation as an equilibrium process of social welfare maximization, following [Demsetz's \(1967\)](#) theory of the emergence of property rights. Therefore, institutions are seen as an efficient equilibrium result of maximizing rational agents. In a first approximation, it may be reasonable to expect that societies will tend to devise institutional forms that reduce transaction costs so that the property rights patterns are the most efficient to encourage the division of labor and productive exchange. However, the political and ideological forces that shape informal and formal institutions are much more complex processes. Davis was not an ideal collaborator for North to develop his novel ideas. As [North \(2009, p. 166\)](#) noted in an interview, "Lance was a terrible person to work with. He was impossible, obstreperous, ornery, and difficult." So he started to work with the young economic historian Robert P. Thomas.

In "An Economic Theory of the Growth of the Western World" (1970), North and Thomas applied the theory of institutional innovation outlined in [Davis and North \(1970, 1971\)](#) to explain European economic history and the Great Enrichment process that occurred in Western Europe since the 19th century. One year later, North and Thomas published "The Rise and Fall of the Manorial System: A Theoretical Model" (1971) using the transaction costs concept to describe the manorial system. This previous research formed the core of one of North's most important books, co-authored with Thomas, *The Rise of the Western World: A New Economic History* (1973). As [North and Thomas \(1973, p. vii\)](#) write in the preface, the book was intended to be revolutionary in the sense that they developed a comprehensive analytical framework "consistent with and complementary to standard neoclassical theory" to explain the rise of the Western World. They argued that the immense wealth accumulation and astonishing rising living standards experienced in Western Europe occurred due to institutional arrangements that compatibilized the expected private and social returns, generating the right incentives for efficient economic coordination, capital accumulation, and technological progress.

According to [North and Thomas \(1973\)](#), the different transaction modes in European economic history can be analyzed within the efficient institutional change framework. They argued that the manorial system in the Middle Ages was a rational economic organization considering the prevailing conditions since the decline of the Carolingian Empire. In particular, when considering transaction costs, population dynamics, technology, and relative factorial prices. In the absence of product and factor markets, the serfdom institution can be understood as a contractual relationship (not without coercion) between the feudal lord and his dependents. The feudal lord exchanges protection against violence within the fortified manor house in return for obligatory labor-time services (such as the *corvée*) or in-kind products cultivated in the property. Changes in population dynamics and technology reverberate in changing relative factorial prices, creating profit opportunities for institutional innovation.

In the 10th century, with a growing population, extensive land cultivation, and increasing trade and urban development, land became relatively scarce vis-a-vis labor. Thus, the amount of forced labor by serfs due to the landlords increased, i.e. wages fell and rents increased. In the mid-14th century, with the bubonic plague pandemic, the relative scarcity between labor and land changed drastically. At least one-third of Europe's population was killed between 1347 and 1352. The black plague made labor a relatively scarce factor in relation to land. In this scenario, the amount of forced labor obligations by serfs significantly diminished. These relative price changes induced efficient institutional changes that would eventually end serfdom and manorial institutions in Western Europe - but also a return to the institution of

serfdom and slavery in Eastern Europe. In this context, lords were forced to change the contractual relationship with serfs offering new organizational tenancy and leasing arrangements so that in some areas of Western Europe serfs were liberated [27].

In the 16th century, landlords in the Netherlands started to encourage trade fairs in their regions, providing judicial courts to secure, define, and enforce property rights, promoting commercial exchange and productive specialization. In the next century, England incorporated some Dutch institutions but also developed its domestic institutional arrangements to promote the alignment of private and social returns. With the Glorious Revolution in 1688, the parliament shackled the Leviathan's absolute power and became the main executive body, establishing the basis for the rule of law and non-discretionary fiscal administration. Property rights were secured and independent courts (matured with the Act of Settlement of 1701) judged disputes based on common law. In addition, the Statute of the Monopolies of 1624 created a patent law system to secure temporary extraordinary private gains for technological innovation and the banking and credit system was developed (see also [North & Weingast, 1989](#); [Milgrom, North, & Weingast, 1990](#)).

Nevertheless, North emphasizes that institutional change carries two great problems that obstruct the capture of profit opportunities toward an optimal institutional structure or a Pareto-improving equilibrium. First, institutional innovation is a non-excludable and non-rivalrous public good such that there is a free-riding problem. Individual members can benefit from the innovation without paying their marginal share of implementation costs. Second, there are the costs of measuring, defining, and enforcing property rights and contracts. Transaction costs hamper the full private appropriation of social benefits and costs. Moreover, transaction costs (in conjunction with production costs) shape the most efficient organizational structure for the scarce economic resources of a society in a determined historical environment.

In general, *The Rise of the Western World* (1973) generated some profound criticism of its embodied basic approach. In his book review, for instance, [van der Wee \(1975\)](#) criticizes the reductionist approach advanced in North and Thomas's analysis. The organic institutional structure encompassing social, economic, and cultural ramifications cannot be reduced to simple property rights analysis and relative price changes. Along the same lines, [Stefano Fenoaltea \(1975, p. 387\)](#) attacks [North and Thomas's \(1971, 1973\)](#) "ingenious interpretation" regarding serfdom in Western Europe and the manorial organization. He disagrees with the basic view that serfdom was essentially characterized by a contractual exchange agreement where labor services were provided in exchange for protection from violence.

Furthermore, [Fenoaltea \(1975, p. 408\)](#) disputes that the classic manorial organization was an efficient equilibrium outcome that minimized transaction costs given relative factor prices, population, and technology. In his view, North and Thomas misspecified the feasible counterfactual alternatives such as indirect barter and market exchange. Moreover, they "misrank the alternatives they consider (as even rents in kind appear superior to labor dues)." In addition, on a methodological ground, [Field \(1981\)](#) argues that the general equilibrium model necessarily defines some parameters as exogenous, e.g. endowments, technologies, preferences, and institutions. In the neoclassical efficient institutional change model, these exogenous parameters are endogenized within the model. However, for the neoclassical model to be consistent it must define some elements as parametric. The model cannot explain all the elements all at once.

Perhaps the main critique of the neoclassical institutional innovation model that North developed with his co-authors in the 1970s is the inexorable vice of rationalizing every arrangement innovation as an efficient (i.e. with less total costs, including transaction costs) equilibrium process of social welfare maximization. When applied to past societies, each one embedded in multifaceted institutional structures, the efficiency criterion appears as if there were an omniscient central planner intended to maximize social welfare, an approach reminiscent of the standard neoclassical general equilibrium theory (e.g. see [Field, 1981](#),

p. 185). Intimately connected with this point is the view that institutions and organizations are mainly determined by the demand side of the contractual agents, ignoring the institutional stickiness present in real economies due to conflicting beliefs, opportunism, and free-riding problems. Instead, the supply of institutions is better defined as the provision of non-excludable and non-rivalrous public goods. Thus, in the 1970s, the neoclassical institutional innovation model ignored the rigid and complex supply function of institutional arrangements.

Moreover, this view contributed to the forceful criticism of ahistoricism in North's account of economic history. This criticism can be segmented into three parts, (1) the objective rational choice model, (2) methodological individualism, and (3) the inclination to universalism (see [Zouboulakis, 2005](#)). These critiques and the insufficient theoretical and empirical explanatory power of the neoclassical institutional innovation model in addressing the fundamental Smithian social coordination problem propelled North to reject some foundational behavioral assumptions of neoclassical economic theory and, in this process, innovating in analytical terms his theory of why some nations are rich and others poor. As it is well known, standard neoclassical economic theory assumes that individuals are perfectly informed and have an objective knowledge of the real world. These behavioral assumptions left no space for institutions in theoretical inquiry. As discussed below, North gradually changed his views on the objective rationality postulate, especially after 1981. As [North \(1991, p. 16\)](#) writes, "in the world of instrumental rationality institutions are unnecessary, ideas and ideologies don't matter, and efficient markets characterize economies."

Regarding methodological individualism, the critique is that focusing on individual action minimizes the embeddedness of individuals in their socially determined context. However, methodological individualism is not equivalent to saying that the human agent is isolated and self-determined - although this characterization is valid in the case of general equilibrium theory. On the contrary, as North will emphasize in his mature work, institutions shape the contours of human decisions and social interactions, molding individual preferences and the subjective lens agents employ in their utility-maximizing efforts. Thus, individual preferences that structure the subjective rational choice are endogenously determined by the social context, in particular, by the shared mental models. Individuals are institutionally constrained in their actions by social beliefs, culture, norms and customs, and formal rules. On the other hand, institutional change occurs by the individual entrepreneurs according to their beliefs and embodied in the incentives framework they are inserted. In this sense, individuals are both constructive within and constructed through the wider society.

On the matter of universalism, the critique is that evaluating the efficiency of historical institutions in completely different social, political, and economic institutional contexts, as if individuals presented the same economic behavior, is "taking history out of history" ([Milonakis & Fine, 2004, p. 19](#)). Indeed, this is the so-called economist fallacy and the essence of the Karl Polanyi challenge, discussed in the next section. In this connection, it is interesting to note that [North \(1968c, p. 468\)](#) stressed the dangers of applying economic models to past societies. In his view, "application of these models to given historical situations requires the specification of the particular functional forms, parameters, or changes in parameters which may not be known to the economic historian."

Nevertheless, critics argued that North failed to precisely address this problem of historical specificity in his account of the rise of Western civilization. For instance, [Binger and Hoffman \(1989\)](#) argue that, since an institution is analogous to a public good, this efficient equilibrium-oriented view of the origin and persistence of institutions ignores that an equilibrium outcome in a repeated coordination game is not necessarily socially efficient. An institution can arise and persist because, even though all individuals would benefit from an arrangement change, no individual would benefit from a unilateral change. In repeated games with multiple possible strategies, multiple inefficient equilibria possibilities exist.

Without a detailed historical specificity, developing a predictive theory of social institutions based on *ex post* rationalization can be very dangerous. In [Binger and Hoffman's \(1989, p. 78\)](#) opinion, "there is a serious problem of circularity when such reasoning is applied to analyses of the origins of institutions in history. Since historical agents did not keep records of relevant transaction costs, we can only infer them. But, when we do so, we miss the fact that our models are not fully specified." We cannot develop a general theory of the emergence of efficient social institutions from sets of initial conditions without a detailed study of the historical and social environment. In this context, [Binger and Hoffman \(1989\)](#) illustrate this point with the historical debate of the origin, persistence, and change of the open field system in Europe.

6. The challenge of Karl Polanyi

"Karl Polanyi's challenge is straightforward," North wrote in his 1977 article "Markets and Other Allocation System in History: The Challenge of Karl Polanyi" ([1977b](#)). The challenge is that, according to [Polanyi \(1944\)](#), "markets have only dominated resource allocation for a brief span in history centering on the nineteenth-century Western World. Before that time - and increasingly in the twentieth century - other allocative systems have characterized economic organization and these systems are not grounded in economizing behavior" ([North, 1977b, p. 703](#)). For most of human recorded history, Polanyi argued, the utility-maximizing assumption that is the core of neoclassical economic theory (and in some form of Marxism, synthesized in the cash nexus) was not present in past societies.

The economicist fallacy consists in looking at history through the lens of an economic theory based on a 19th century phenomenon. Only in the 19th century did impersonal market exchange expand as a significant allocation procedure. [Polanyi \(1944\)](#) argues that reciprocity and redistribution embedded in a cage of customs, traditions, and norms constituted the most dominant allocation procedure in ancient societies. These transaction modes are mainly determined by social and cultural factors, not by individual rational economic calculation based on utility-maximizing. In this context, a choice-theoretic approach to understanding social phenomena is wholly inappropriate in a world that rules out any individual voluntary choice by a rigid cage of cultural norms and tribal habits.

Reciprocity is grounded in sexual and genetic forms of social organization, such as family and kinship. It involves obligatory gift-giving between family and kin relations. Redistribution works based on a community under the command of a common political and/or religious authority in a determined territory. It involves an obligatory payment system to the political authority that uses its resources to provide some form of public good and social safety net. Other types of transaction modes are administered trade, gift trade, special purpose money, and ports of trade. Therefore, given that economic theory is based on the utility-maximizing postulate and is confined to the analysis of impersonal market exchange, Polanyi contended that "the tools of the economist were not only irrelevant to an understanding of the ancient world, but were increasingly less useful to explain the evolving economies of the twentieth century as well" ([North, 1977b, p. 706](#)).

According to [North \(1977b, p. 704\)](#), since "one cannot directly test behavioral postulates," such as the utility-maximizing hypothesis, "the proof of the pudding is in the eating. The increasing popularity of the new economic history suggests that the tools of economics provided gourmet fare." In North's opinion, Polanyi's arguments on institutional and organizational analysis contain many flaws, such as his highly selective historical evidence and the clear understating of markets throughout history. In his review of Polanyi's book *The Livelihood of Man* ([1977](#)) to the *Business History Review*, [North \(1978c, p. 399\)](#) writes that "[i]t is easy to criticize Polanyi. He never understood neo-classical theory; and even more important, much of his analysis is perfectly compatible with recent developments in

transaction cost theory. The self-regulating market was no more a viable form of organization in the early Athenian grain trade than it is in the world oil market today and for quite similar reasons, but we do not argue that Saudi Arabia or Exxon are not interested in wealth maximization. The organizational forms described by Polanyi make good sense in the context of the transaction costs of the time.”

Moreover, [North \(1978c, p. 399\)](#) sustains that Polanyi has “no explicit hypothesis about the state” and “no dynamic source of change that alters reciprocal and redistributive societies” is provided in the book. Nevertheless, [North \(1977b, p. 707\)](#) maintains that the only way to meet Polanyi’s challenge is to develop a new alternative theoretical framework “that can explain past and present institutional structures and is amenable to testing.” He agrees with Polanyi that all societies have many elements of different transaction modes besides the price-making impersonal markets, such as reciprocity and redistribution. The fundamental question is that, in the past and present, institutional arrangements that are substitutes for market coordination still dominate exchange, such as families, firms, guilds, manors, and the government. Thus, North offers an economizing explanation of these various non-market transaction modes and decision-making units grounded in transaction cost analysis.

Incorporating all the costs underlying the process of exchange in addition to the production costs, North argues that the economic historian can begin to explain the institutional structure developed by societies in an effort to capture the mutual exchange gains of social cooperation and productive specialization. If the costs of measuring, delineating, and enforcing property rights exceed the benefits, price-making markets for goods and services will not be formed. Other types of non-price coordination mechanisms will emerge as a response to potential mutually beneficial exchanges. As may be evident, transaction costs in the human past were enormous due to the widespread violence threats. The fundamental violence problem propelled different social and cultural forms of ensuring relative peaceful cooperation through reciprocal and redistributive transaction modes based on kinship, family, status, and hierarchy.

In this sense, analyzing Polanyi’s classic example of the Kula trade of the Trobriand Islanders, [North \(1977b, p. 713\)](#) concludes that “reciprocity societies can be considered as a least-cost trading solution where no system of enforcing the terms of exchange between trading units exists.” Polanyi understands these social relations as essentially determined by cultural, social, and psychological factors which are naturally non-economic forces. On the other hand, [North \(1977b, p. 715\)](#) maintains that these social arrangements and traditional customs in ancient societies (as the customs of the manor) are “consistent with an explanation that they evolve as ways to reduce transaction costs.” Although there is no way to directly test the transaction costs hypothesis, North argues that “changes at the margin in transaction costs should allow us to develop refutable explanations.” The transaction cost framework can explain changes in the decision-making units’ mix of the system throughout time. It is something that Polanyi’s historical account cannot do since it is a static view of the established cultures, social arrangements, and economic systems.

In this context, [North \(1984a\)](#) argued that with the increasing expansion of impersonal market exchange and the division of labor, more and more economic resources would have to be devoted to deal with the transaction costs associated with defining, measuring, and enforcing property rights and contracts since the gains from opportunism would increase. Thus, for instance, [North and Wallis \(1987\)](#) estimated that the US transaction sector had grown from 25% of GNP in 1870 to 45% of GNP in 1970. The government, primarily concerned with transacting, grew immensely in scale and scope - from 1 million to 12.5 million workers between 1900 and 1970. In addition, North (e.g. [1978b, 1984b, 1985](#)) documents how increasing productive specialization within technological advances changed the demand for and supply of government goods and services in the United States.

7. “The best book I ever wrote”: *Structure and Change in Economic History* (1981)

In the early 1970s, [North and Thomas \(1973\)](#) argued that the creation and enforcement of property rights that aligned expected private and social returns was the key to technological progress and economic growth. In the neoclassical institutional innovation model that structures this book, early advanced by [Davis and North \(1970, 1971\)](#), institutions are designed to capture mutually exchanged gains and sustain social cooperation and organizational competition within the market price coordination process. Therefore, institutional and organizational analysis is considered an efficient equilibrium outcome of maximizing individuals and action groups. This efficient equilibrium result is true independent of how the word efficiency is defined.

Indeed, according to the standard neoclassical general equilibrium theory with zero transaction costs, perfect knowledge, and given reasonable hypotheses on population dynamics and aggregate savings, economic growth and efficient resource allocation should be a trivial common fact of the ordinary business of life. However, human history shows that economic stagnation and social decline were until very recently the universal norm and not the exception. This universal empirical fact presents a major puzzle for the efficient institutional change model and the neoclassical theoretical apparatus embodied in its approach. If institutions are created purely to capture mutually beneficial exchange gains and enhance social coordination and productive specialization under the division of labor, how can we explain long-run poor economic performance?

In 1960, North became a Professor of Economics at the University of Washington, Seattle. He would retain this position until 1983 when he moved to Washington University in St. Louis to become Henry R. Luce Professor of Law and Liberty. From 1967 to 1979, North served as the chairman of the Department of Economics at the University of Washington. During this period, Yoram Barzel and Steven N. S. Cheung became a major joint force in introducing and advancing transaction cost economics within the department. Both theorists had been students of Ronald Coase at the University of Chicago, with Barzel completing his Ph.D. in Economics in 1961 and Cheung pursuing a postdoctoral fellowship from 1967 to 1969 - when he moved to Washington. Both authors emphasized the importance of the measurement problem in connection with transaction costs, i.e. the quantification of information in transactions and contractual arrangements. As [North \(1997a, p. 260\)](#) recognizes, he “learned a great deal from both of them [Cheung and Barzel], and their influence is apparent in my next [[North, 1981](#)] book.”

In the late 1970s, North tried to address the failures of the cliometric approach to answer the Smithian Grand Question and to confront Polanyi’s challenge to explain the different historical transaction modes. The final product of this intellectual effort of theoretical construction is his famous *tour de force* book *Structure and Change in Economic History* (1981), mainly written in 1980. [North \(2009, p. 169\)](#) considers this work “the best book I ever wrote,” being “very fond of it.” In another place, [North \(2008, p. 207\)](#) reflects that if he had to pick one book “that I think most completely and effectively put it all together at one moment in this evolutionary process [of his thinking], it would be *Structure and Change in Economic History*.” He justifies this choice because the second part of the book “had enough illustrations of the implications for history, so I thought it turned out better,” even though the theory developed in the first part is admittedly, in a retrospective view, “very incomplete.”

According to [North \(1981, p. 7\)](#), “explaining economic performance in history requires a theory of demographic change, a theory of the growth of the stock of knowledge and a theory of institutions, in order to fill the gaps of neoclassical theory.” In other words, we need a theory capable of internalizing all the exogenous constraints in the choice computation neoclassical economic theory. To achieve this purpose, he draws upon the then-existing literature on demographic change, discussing the growth of the stock of knowledge “in the context of the changing structure of incentives incorporated in institutions.” Thus, this allows

him to primarily focus on building a theory of institutions that can cope with established empirical historical facts.

In the process of manufacturing a Grand Theory that can explain institutional change and long-run economic growth, North amalgamates in a neoclassical-extended analytical framework three fundamental building blocks. First, a theory of property rights that constitutes individual and action group self-interested incentives embodied in the economic structure. Second, a simple neoclassical theory of the state which specifies and enforces these property rights. Third, a theory of ideology that explains how different subjective perceptions frame individuals' maximizing reactions to changes in the objective environment. With these building blocks, he argues that it is possible to formulate a theory that is capable of integrating the main factors that compose the structure of an economy and that determine economic change and performance, namely, the social, political, and economic institutions, technology, demography, and ideology.

Furthermore, this analytical framework includes other sources of decision-making present in all human societies and outside the domains of neoclassical economics focused on the price coordination mechanism embodied in the market exchange process. These decision-making units are the household (intrinsically connected with demography), voluntary economic organizations such as firms, and the government. All these decision-making elements are structured and unfold in an environment in which the price coordination mechanism is nonexistent. In this context, in addition to the market exchanges, these four *loci* of decision-making are prone to persistent and chronic discoordination processes due to transaction costs, free riding, and costly information in conjunction with individuals' subjective interpretation of reality. Interpretations that, when socially shared, create an ideology.

A representative case of his treatment of the growth of knowledge framed by the structure of individual incentives is that technological advance crucially entails institutional arrangements that delineate effective property rights in innovations, such as creating legally temporary rents in order to elevate the innovation expected private return close enough to the social return. Thus, in this way, it provides incentives for technical progress and economic growth. In principle, this rationale serves as the foundation for intellectual property rights and the patent system. Indeed, in North's (1981, p. 164) opinion, the "failure to develop systematic property rights in innovation up until fairly modern times was a major source of the slow pace of technological change."

In chapter III of *Structure and Change*, North develops perhaps the main component of his new political economy analytical framework, "A Neoclassical Theory of the State." In a simple tribal order, customs, traditions, habits, and informal rules are sufficient to specify and enforce personal exchange within a consensus-shared ideology. However, in a world of increasing impersonal market exchanges under the productive division of labor and knowledge, a third-party organization must emerge to specify property rights and enforce contractual arrangements. The state intrinsically has a comparative advantage in exercising violence. In particular, the state has the function of giving predictability in impersonal and non-repeating dealings, guaranteeing that expected outcomes agreed upon in written, verbal, and implicit contracts will be enforced.

In North's (1981, p. 17) perspective, a "theory of the state is essential because it is the state that specifies the property rights structure. Ultimately it is the state that is responsible for the efficiency of the property rights structure, which causes growth or stagnation or economic decline." The state is a collective-action entity that provides elementary public goods and services (such as protection, the formal rules that define and enforce property rights, and the political institutions that determine the social choice procedures) in exchange for revenue.

Influenced by the public choice literature that applied standard economic theory to non-market political decision-making advanced by Anthony Downs (1957), Buchanan and

Tullock (1962), and Olson (1965), North (1981, p. 24) sees the state as a utility-maximizing ruler who attempts to maximize his own benefits (revenues) subject to the competitive constraint of losing his position as ruler and a transaction cost constraint of measuring and collecting revenue since efficient rules can be more costly to enforce in terms of tax collection [28].

The basic services that the state provides are the underlying rules of the game. Whether evolving as a body of unwritten customs (as in the feudal manor) or as a written constitution, they have two objectives: one, to specify the fundamental rules of competition and cooperation which will provide a structure of property rights (that is, specify the ownership structure in both factor and product markets) for maximizing the rents accruing to the ruler; two, within the framework of the first objective, to reduce transaction costs in order to foster maximum output of the society and, therefore, increase tax revenues accruing to the state.

In this context, there is a fundamental divergence between the set of basic rules, institutions, and property rights structure that maximizes the ruler's private revenues and the one that maximizes the aggregate social output. The introduction of the theory of the state, in conjunction with his theory of ideology, marked the departure by North of the naive view that institutions were an efficient social equilibrium outcome of maximizing agents. In this case, individuals are still trying to maximize their utility but only in the subjective rational action sense. Moreover, the strategic interplay of utility-maximizing agents, in particular the complex interaction between the ruler and its citizens, does not produce a socially efficient institutional and property rights structure. Thus, the result is an inefficient resource allocation and stagnant economic growth.

The discoordination processes of the four decision-making *loci* explain how inefficient and rent-seeking political and economic institutions would tend to exist and be perpetuated. Indeed, as a general case, it is rational for the ruler to produce an inefficient property rights structure to maximize his benefits. Nevertheless, if the ruler attempts to raise by all means its revenue, it will disincentive productive activities and market exchange, thus reducing total output and future income. Moreover, it will raise the return of constituents to invest in overthrowing the ruler and seek foreign or internal substitutes to take political power. With greater foreign competition and internal substitutes, the greater bargaining power of the constituents can precipitate a change in the implicit contractual agreement. This re-contractual effort will aim to reduce transaction costs and appropriate the larger share of resultant incremental income. State rivalry and rulers' competition are determined by many factors, ranging from geography (e.g. if the state is geographically insulated such as Britain it is more difficult to execute a foreign invasion), demography (e.g. increasing population reduces the provision costs of protection since defense is both a non-excludable and non-rivalrous public good), and military technology.

According to North (1981, ch. 10), military technology influences the property rights distribution of coercive power or violence potential. Therefore, the military technology of the heavily armored knight and the medieval fortified castle led to a property rights distribution of coercive power that favored the institutionalization of feudalism. With a change in military technology, exemplified by the development of the pike, longbow, and gunpowder, the property rights distribution of potential violence changed, paving the way to the end of manorial political institutions. Indeed, the Marxist political scientist Levi and North (1982) develops this argument by making a case for a property-rights theory of exploitation based on the access and distribution of the means of potential violence, which determines the bargaining power in the political decision-making process.

In consequence, North (1981, p. 18) writes that "the property rights which emerge are a result of an ongoing tension between the desires of the rulers of the state, on the one hand, and the efforts of the parties to exchange to reduce transaction costs, on the other. This simple dichotomy actually is anything but simple, since the parties to an exchange will devote

resources to influencing the political decision-makers to alter the rules.” He also argues that for any institutional matrix to be functional, there must be a moral value system, an ideology, or what Denzau and North (1994) called shared mental models, which gives the *de jure* rules a *de facto* counterpart. Any institutional political system carries a free-riding problem for concerted collective action, so the costs of social conformity and the legitimacy of formal rules will depend on informal norms and values. Alterations in ideology change the free-riding costs to invest in collective and group action to influence political and social decisions.

In the second part of the book, North applies his analytical framework to crucially reinterpret economic history from the origins of agriculture ten thousand years ago to the 20th century. Starting with the first economic revolution, he analyzes in eight chapters the Ancient World, the rise and decline of feudalism, the early formation of Europe, the Industrial Revolution, the second economic revolution, and the American economic growth experience. In particular, as illustrative of his political economy model, North (1981, pp. 156–7) contrasts the foundations of the political and economic experience during the sixteenth until the 18th century in early modern Europe.

In this period, in stagnant France and declining Spain, the desperate need for revenue to finance a large rent-seeking bureaucracy dependent on the crown and war campaigns led to the undermining of property rights, market competition, and technological change. In its most famous example, Colbertism in France propelled the sale of market monopolies to guilds as a systematic revenue method. In contrast, in the prosperous Netherlands and rising England, the political power of the merchant elites implied an institutional architecture that established secured property rights, widespread market competition, and induced technical progress and innovation. In England, as North (1981, pp. 156–7) summarizes, “little reason existed to concentrate authority in the crown over property rights and taxation [. . .]. The rise of Parliament caused the nature of English property rights to diverge from the Continental pattern. The power to grant property rights increasingly fell to a group whose own interests were best served by private property and elimination of crown monopolies.”

In contrast with his 1973 co-authored book, North’s *Structure and Change in Economic History* (1981) was a much more ambitious, revolutionary, and groundbreaking work. It marked the beginning of a period of active theoretical building and innovation, enlarging the scale and scope of neoclassical economic theory. Perhaps because of these bold and original intentions aimed to explain economic growth and structural change, it was widely well-received and acclaimed with celebrated reviews by all intellectual parties (e.g. Goldstone, 1982; Rostow, 1982; Galenson, 1983; Millward, 1983; Tullock, 1983). Until recently, it was his most cited work.

In Rostow’s (1982, p. 300) review, he writes that “North’s effort to link economic and political change and to break out of the confines of neoclassical analysis, without abandoning its real but limited virtues, is right and is a central task of social science. But I do not believe his method will do the job. Its failures all stem from the same source: his lack of a reasonably coherent view of the individual human being.” Hence, in Rostow’s opinion, “North is striving towards a general social science by the method of the pre-Copernican astronomers; i.e. by adding spheres to the Ptolemaic (neoclassical) system to account for the observed phenomena it did not explain.”

By his turn, Galenson (1983, p. 190) notes that “the more important and lasting contribution of the book will be through the work on long-run change that it will bring forth, by those who would contradict North as well as by those who would support him.” Along the same lines, Tullock (1983, p. 190) predicts the emergence of a major new industry of inquiry correcting and, in particular, expanding and making further progress along the foundations laid out by North. As Pryor (1982, p. 989) put it in a more mixed review of the book, whether one accepts North’s (1981) “explanations of particular historical events or not, we must still deal with the questions he has raised. And this is, of course, the real purpose of the book.”

8. Epilogue: toward a New Institutional Social Science

Douglass C. North's intellectual journey derives from the search for a Grand Theory as a response to the Smithian social coordination problem. What are the nature and causes of the wealth of nations? We can trace this objective as clearly stated in his mind as a young undergraduate Marxist student in the early 1940s. Furthermore, it was why North chose economic history as his main field of inquiry and specialization in his Ph.D. dissertation under the supervision of Melvin Moses Knight at Berkeley. In his first major article dealing with location theory and regional economic growth, [North \(1955\)](#) was deeply influenced by his mentor Knight. In his effort to understand regional economic development, North tried to ground in a more rigorous theoretical framework the underlying processes of economic change.

As a result, North incorporated Knight's concerns with the fundamental scarcity problem and the dynamic social responses to it in the long run, combined with the importance of initial endowments and the ecology of place, to construct a neoclassical model of regional economic growth grounded in staple export-led growth, interregional trade, and market integration. In the mid-1950s, he delineated the building blocks of the staple export-led growth model *en route* to a reinterpretation of early American economic history. These conceptual blocks are [Smith's \(1776\)](#) analytical vision that market coordination and productive specialization drive economic growth, Harold [Innis' \(1920\)](#) staple hypothesis, and [Callender's \(1902\)](#) classic three-region model. In the subsequent years, North refined his staple export-led growth model and his reinterpretation of American antebellum economic growth.

In the late 1950s, [North \(1959\)](#) extended his model according to the natural endowments of the region (at any given level of technology), the character of the export industry, and changes in technology and transportation costs. North was particularly influenced by [Baldwin's \(1956\)](#) discussion on the nature of the export production function. In the same period, he became the greatest theorist and one of the leading exponents of the cliometric revolution in the United States. As a result of the 1957 pivotal EHA/NBER joint conference, [North \(1960a\)](#) published his major quantitative work on the 19th century US balance of payments. The conjunction of all these previous theoretical and quantitative developments culminated in North's profound historical reinterpretation of American economic growth in the antebellum period in his famous and acclaimed first book on *The Economic Growth of the United States, 1790–1860* ([1961a](#)).

In 1966, North went to Europe as a Ford Faculty Fellow. With the publication of his *Growth and Welfare in the American Past: A New Economic History* ([1966](#)), he decided to change from American to European economic history. However, he soon realized that it was impossible to utilize the standard neoclassical equilibrium analysis to account for European multidimensional institutional arrangements and drastic social change since the Medieval times. Neoclassical economics assumed the existence of the underlying institutional conditions that were a prerequisite of the market coordination mechanism. Moreover, it was a static allocation theory that could not explain how these same underlying conditions of market exchange could come into existence.

In his account of the "Sources of Productivity Changes in Ocean Shipping, 1600–1850" ([1968b](#)), North concluded that ocean shipping costs decreased, particularly in the 19th century, mainly due to organizational and institutional innovations that reduced piracy and not technological advancements *per se*. It was the step that North needed to start to develop a theory of institutional innovation using the neoclassical choice-theoretic approach at the margin. In *Institutional Change and American Economic Growth* ([1971](#)) and *The Rise of the Western World: A New Economic History* ([1973](#)), North and his co-authors adopted what became known as a naive theory of institutions and property rights based on [Demsetz \(1967\)](#). North and his co-authors argued that the wealth of nations is essentially a path-dependent process of institutional building that minimizes the divergence of private and social returns.

Implicit in this stage is the notion that institutions and the property rights structure are socially efficient.

In the mid-1960s and early 1970s, the success of New Economic History in myth-busting disseminated historical views was not accompanied by reaching positive theoretical conclusions. Cliometrics could not provide quantitative nor theoretical answers to the big question that motivated North's pursuit of a Grand Theory. The embodied neoclassical theoretical apparatus in the cliometric approach was not designed to deal with the determinants of the constraints, thus institutional change and economic performance. Indeed, neoclassical theory is essentially a theory of static choice computation that takes as exogenous all the elements that constitute social cooperation and sustain economic coordination. In addition, this approach could not rigorously test alternative explanations for the rise and decline of nations. Economic historians were forced to narrow their inquiry to more manageable empirical questions (e.g. Wallis, 2016, p. 939).

From North's perspective, constructing an analytical framework to explain the rise and fall of nations, i.e. their social-political structure and economic performance, is the main task of economic history. In this sense, cliometrics was not upon this task since it did not replace the old historical truths with a systematic explanation of economic change. As North (1978b, p. 963) put it, "[c]liometricians have turned their backs on a long tradition stretching back from Joseph Schumpeter to Karl Marx to Adam Smith." In his 1973 presidential address to the Economic History Association, North urged his cliometrician peers to go "Beyond the New Economic History" (1974). In his view, while maintaining the utility-maximizing hypothesis and opportunity cost analysis, it was necessary to broaden the frame of reference of neoclassical economics to include a theory of property rights derived from transaction costs, a theory of demographic change, a theory of the state, a theory of ideology, and other sources of non-market decision-making. North realized that the Great Enrichment and the rise of Western civilization as the most economically developed and complex open society in the world could not be explained by some form of the ergodic and static neoclassical production function.

However, if institutions are efficient devices created to capture exchange gains as maintained in the neoclassical institutional innovation model, it is impossible to explain how some countries experienced long-run economic stagnation or decline and others economic growth and shared prosperity. This basic empirical fact is completely contradictory with the implications of standard neoclassical economic theory and constitutes one of the central tensions of the adoption of neoclassical economics to treat the economic past. In the late 1970s, North realized that institutions and institutional change are first and foremost determined by social and political choices. Furthermore, these choices are constrained by individuals' subjective interpretations of the external objective world. Therefore, he was forced to recognize that a satisfactory answer to the Smithian grand problem must lie in the construction of an analytical framework that explains how institutions induce long-run economic stagnation and decline. Moreover, it must develop a political economy model that accounts for the social and political decision-making processes that determine the underlying source of institutions and property rights structure. Finally, it should explain the nature of the individuals' subjective worlds and the ideological frame of reference that constrains their choices and propels collective action by reducing free riding.

In his book *Structure and Change in Economic History* (1981), North focuses on building a theory of institutions that explains how inefficient property rights structures are likely to emerge as recurrently demonstrated in universal economic history. To this purpose, he internalizes into the neoclassical utility-maximizing hypothesis the multidimensional sphere of transaction costs. This results in the incorporation of three building blocks into neoclassical economic theory, i.e. a theory of property rights and contractual arrangements, a simple neoclassical theory of the state, and a sketch of a theory of ideology. (Indeed, North will develop in more detail the cognitive foundations of shared mental models and beliefs in his later work.) In particular, North develops

in chapter III of his book “A Neoclassical Theory of the State” that specifies and enforces the property rights structure in which individuals’ maximizing actions unfold.

North’s pursuit of a Grand Theory for why some nations are rich and others poor guided his theoretical evolution and was a definitive line of profound continuity and progression in his intellectual journey. However, this committed pursuit also produced deep antagonisms within his adopted neoclassical analytical framework. In endorsing the New Economic History revolution in the early 1960s, North gradually perceived the limitations of the cliometric approach to economic history. In the late 1960s, when he changed to European economic history, the inadequacy of the neoclassical analytical instruments to provide a successful explanation of the political and economic institutional infrastructure, social change, and economic performance through time became evident.

In the early 1970s, North became increasingly dissatisfied with the standard approach. In his 1973 presidential address, North urged his peers to go beyond the received theoretical tradition that was the backbone of the New Economic History. It should be noted that [North \(2008, p. 203\)](#) was not against neoclassical economic theory *in toto*. Indeed, he considers the economic way of reasoning, synthesized in price theory and opportunity cost, “the most powerful tool of analysis in all the social sciences, and you don’t give that up.” Nevertheless, the received standard theory and its hypotheses were wholly inadequate to account for the different institutional matrices and economic change, urging for the modification of neoclassical assumptions and progressive theoretical innovations. The central tension between the received neoclassical tradition and its failure as an approach to understanding the Smithian grand social coordination problem shaped North’s intellectual journey and subsequent analytical developments.

Standard neoclassical economics simply could not explain the fundamental historical and empirical fact that until very recently human civilization was economically stagnated and produced not economic growth and social welfare but social decline, economic stagnation, and political violence. The failure of standard neoclassical apparatus to understand the Great Enrichment and the economic past of societies propelled North to engage in active theoretical construction, rejecting some of the traditional hypotheses of general equilibrium theory (in particular, the instrumental objective rationality postulate) and extending the neoclassical framework with neglected elements such as transaction costs, property rights, and contracts that constitute the institutional structure of an economy. In the later 1970s and early 1980s, this resulted in the creation of a new field of inquiry that could remedy this state of affairs. It was the birth of New Institutional Economics.

Notes

1. As [Williamson \(1975, p. 1\)](#) put it in the book that coined the term New Institutional Economics, a common principle that encompasses the broad range of fields that formed this body of thought is “an evolving consensus that received micro theory, as useful and powerful as it is for many purposes, operates at too high a level of abstraction to permit many important microeconomic phenomena to be addressed in an uncontrived way.”
2. Moreover, North’s work has attracted substantial attention from heterodox economic approaches. These are more inclined to deal with the multidimensional aspects of his research agenda. However, these interpretations tend to give prime focus to the similarities and differences between North and heterodox traditions, such as Marxism and Old Institutional Economics. Thus, many interesting but divergent Marxist interpretations have appeared (e.g. [Wisman, Willoughby, & Sawers, 1988](#); [Fine & Milonakis, 2003](#); [Milonakis & Fine, 2004, 2007](#)). Similarly, a myriad of old institutionalist authors reacted by trying to build bridges and integrating the various institutional approaches (e.g. [Groenewegen et al., 1995](#); [Fiani, 2004](#)), assessing in a comparative analysis old and new traditions (e.g. [Rutherford, 1996, 2001](#); [Fiori, 2002](#); [Vandenberg, 2002](#); [Broda, 2021](#)), and stressing fundamental differences and incompatibilities (e.g. [Dugger, 1995](#)).

3. This three-part research division of North's career was advanced by [Galenson \(1983\)](#). As [Groenewegen et al. \(1995, p. 472\)](#) write, "North has gradually moved away from a predominantly deductive explanatory strategy to one that is more clearly characterized by a back and forth between empirically established relationships and explanatory models carefully designed to do the job of explaining." [Brownlow \(2010, p. 311\)](#) argues that this is closer to the methodological vision of historical economics (e.g. as represented by Charles Kindleberger) and the old institutionalist tradition (see [Hodgson, 1998](#)). In [Brownlow's \(2010, p. 311\)](#) opinion, as North became more accepted in the professional mainstream, he became increasingly more revolutionary. Brownlow maintains that this tension is understandable and easily resolved when considering that mainstream economics has shifted and changed considerably since the 1980s (cf. [Colander, 2000](#)). The correlation appears to exist. However, it is not trivial to determine the causation between these two intellectual movements. Indeed, one could easily make a case for the opposite causation.
4. [North \(1978a, p. 77\)](#) defines explanation as an act of explicitly theorizing and searching for the potential of refutability. The structure is defined "as those characteristics of society that we believe to be the basic determinants of performance," which includes "the political and economic institutions, technology, demography, and ideology." Performance is understood as expressed in the main standard measures of economic output, per capita income, and income distribution.
5. From the mid-1920s onwards, Knight published extensively on European economic history, including two books on *Economic History of Europe to the End of the Middle Ages (1926)* and, with Felix Flugel and H. E. Barnes, *Economic History of Europe in Modern Times (1928)*.
6. In the words of [Pontecorvo and Stewart \(1979, p. 243\)](#), Knight has a "deep fundamental concern with the problem of the nature of economic scarcity and society's response to scarcity through time [. . .]. He transcends [Thorstein] Veblen and especially [John Kenneth] Galbraith and [Walt W.] Rostow by his concern with the evolution and the full extent of economic structures. While Veblen was concerned with the industrial economy and its linkages to other elements, e.g. finance, etc., Knight's view is both more holistic and more focused on the evolutionary and disequilibrium properties of economic systems. [. . .] Knight adds a strong sense of geography, of place, and the ecology of place. In this particular way, he reveals his links both with his rural origins and with the traditions of French economic history."
7. In 1927, Parsons earned a D.Phil. in Economics from the University of Heidelberg, being in this same year appointed an instructor in the Department of Economics at Harvard. In 1927, Parsons first met Schumpeter when the Austrian was at Harvard as a visiting professor. As [Richard Sweldberg \(2015\)](#) documents, Parsons was much more influenced by Schumpeter than vice versa. In particular, Parsons was immediately attracted to the notion of a theoretical system or analytical economics that he had learned when he sat in Schumpeter's course in "General Economics" in 1927. In addition, Parsons was involved in the Center in Entrepreneurial History, although in a more marginal fashion. The most famous product of this Schumpeter-Parsons lineage is the business historian [Chandler \(1977\)](#), who employed an institutional-sociological approach to analyze the managerial structures of modern corporations.
8. The term cliometrics appeared in print for the first time in an article by Lance Davis, Jonathan Hughes, and Stanley Reiter on the "Aspects of Quantitative Research in Economic History" (1960, p. 540). They write that "the logical structure necessary to make historical reconstructions from the surviving debris of past economic life essentially involves ideas of history, economics and statistics. . . [and this] has been labeled 'Cliometrics.'"
9. Deirdre N. McCloskey called this approach *Econometric History (1997)*, i.e. a history based on economic theory with statistics and quantitative measuring methods (thus the econometric part). The term is already present in the title of [Fogel's \(1964\)](#) classic book derived from his Ph.D. dissertation at Johns Hopkins University.
10. As [North \(1974, p. 188\)](#) writes, "[m]any of the earliest contributions to the new economic history were efforts to provide additional quantitative measures of economic growth - indeed, the whole development of national-income accounting pioneered by Simon Kuznets and his followers was a basic impetus to this approach."

11. However, [North \(2008, p. 200\)](#) maintains that he and Parker “were sort of pawns in a big game that we didn’t really quite know.” [North \(2008, pp. 200–1\)](#) remembers that “the Trustees voted to impeach us; that is, they voted to examine whether we should stay on as editors. The basis was complaints (by some people I’ll leave nameless) that we were incompetent. So the Trustees then demanded that we explain ourselves. [. . .] Between us, however, I think what we did was a landmark for the *Journal*. It’s true people complained about things, but the fight was over – that is, that this sort of economic history had an important place and was really part of what economic history was going to be. What proportion it should be, and how it should be done, and things like that, were still controversial, but not that it shouldn’t be done and that it shouldn’t be a part of the profession. I might add, we got impeached but we didn’t get fired; finally, they went back and agreed to continue us, even though with some reluctance on quite a number of the Trustees’ parts.”
12. [Whaples \(1991\)](#) measured that the articles that employed the cliometric approach were multiplied by more than seven in the *Journal of Economic History* regular issues from the 1956–60 period to the 1971–75 period. They went from 10 percent of the total articles in regular issues to 72 percent. See also [Diebolt and Hauptert’s \(2018\)](#) counterfactual estimations. The Harvard Center’s *Explorations in Entrepreneurial History* also became dominated by the cliometric young Turks under the editorship of John Meyer. In “The Economics of Slavery in the Antebellum South” (1958), one of the most influential papers within the movement, [Anfred Conrad and Meyer](#) demonstrated that slavery had a positive economic rate of return. One year earlier, [Meyer and Conrad \(1957\)](#) published their milestone paper on methodology that would be crucial to the cliometric approach.
13. Additionally, [Fogel \(1964\)](#) demonstrated that total (i.e. interregional plus intraregional) social savings of railroads were about 2.7 percent of GNP in 1890. Nevertheless, Fogel’s estimations were disputable. In his award-winning Ph.D. dissertation at Harvard University written under the supervision of Alexander Gerschenkron, [Albert Fishlow \(1965\)](#) evaluated the impact of railroads on the antebellum American economy using different counterfactual estimations with different assumptions. Thus, compared to available transportation alternatives in the antebellum period, [Fishlow \(1965\)](#) estimated that the railroad’s social savings were 4 percent of GNP in 1858. Extrapolating this number, he estimated that the social savings were at least 15 percent of GNP in 1890. These divergent estimates generated the social savings controversy in the following years. However, both authors agreed that the backward linkages of railroads in other sectors were not as large as Rostow hypothesized because railroads consumed only a limited portion of input commodities such as iron, coal, lumber, and machinery. Therefore, the evidence did not corroborate Rostow’s hypothesis that railroads were a leading sector that induced widespread industrialization.
14. Indeed, [North \(1958a, p. 74\)](#) writes that “one could advance a hypothesis which is the reverse of Rostow’s, namely, that the opening up and development of new areas capable of producing primary goods in demand in existing markets induced the growth of industrialization.” More importantly, “[i]t is doubtful whether the diverse paths by which economies may expand and/or industrialize can be encompassed into any framework of universal applicability, at least in the present state of knowledge.”
15. Although neither [North \(1959\)](#) nor [Baldwin \(1956\)](#) mentioned Veblen regarding this point, a connection can be made with Veblen’s conspicuous consumer and emulative demand patterns. In his reminiscences, [North \(1997a, p. 257\)](#) writes that “[a]s a graduate student I had read Thorstein Veblen and John R. Commons and been impressed by the insights they provided into the working of economies, but they did not provide a theoretical framework that we could use to explain and analyze economic history. The old institutional economics, because it failed to provide such a theoretical framework, never posed a serious alternative to neoclassical theory.” In his John R. Commons Lecture Award, [North \(1992, p. 3\)](#) argues that “[a]nyone who goes back to read *The Legal Foundations of Capitalism (1924)* will find that Commons anticipated much of the evolving literature of the New Institutional Economics. He and the other practitioners of the old institutional economics - Veblen, Mitchell, Ayres - gave us imaginative insights, perceptive description, quantitative measurement. They did not, however, give us theory. And it is the development of an integrated, systematic body of theory that not only is the hallmark of a discipline, but also provides the essential scaffolding for the further development and progress of a discipline. The New Institutional Economics remedies (albeit imperfectly) that theory defect.”

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16. Discussing the 18th century colonies, [Smith \(1776, p. 215\)](#) notes that this institutional difference is markedly present in the English and Spanish colonization practices. As Smith explains, the “political institutions of the English colonies have been more favorable to the improvement and cultivations of this land.” In the 19th century, this theory was developed further by the German historian Arnold Hermann Ludwig Heeren (1760–1842), the founder of the German Historical School Wilhelm G. F. Roscher (1817–1894), and the French political economist Pierre Paul Leroy-Beaulieu (1846–1913). In the mid-20th century, it would be independently developed in the works of [Baldwin \(1956\)](#) and [North \(1959\)](#). In his acclaimed interpretation of Brazilian colonial history, the Marxist historian [Júnior and Caio \(1942, 1945\)](#) explicitly mentioned Leroy-Beaulieu’s typology and spread the dichotomy between settlement and exploitation colonies within Latin American historiography. A few years later, the Brazilian economist Celso Furtado appropriated and stressed this point in his 1959 classic work on *Formação Econômica do Brasil*. See [Monastério and Erhl \(2019\)](#).
 17. We should also note that Furtado’s mature writings emphasized the role of emulative demand patterns of ruling classes in underdeveloped countries for obstructing widespread industrialization and perpetuating this underdeveloped condition. This point encounters parallels in [North’s \(1959\)](#) analysis of the co-evolution of resource endowments that determines the staple commodity production function, institutions, and the role of export-led agriculture in regional economic growth. For an overview of Furtado’s theory of economic development, see [Boianovsky \(2010\)](#).
 18. As discussed, Knight’s approach can be classified as closer to Braudel’s *École des Annales*. Furtado was deeply influenced by Braudel’s social history and Claude Lévi-Strauss’ structuralism. For a discussion on Furtado’s methodological position, see [Boianovsky \(2015\)](#). In [North’s \(1977a, p. 191\)](#) judgment, the “Annales School builds on bits and pieces of theory - geographical determinism, Marxism, Malthusianism; at its best, in the hands of a Braudel or a [Emmanuel] Le Roy Ladurie, it is more an art form than a scientific approach to history. [. . .] Although Annales scholars have made extensive use of price statistics, they are seldom schooled in economic theory, and, as a result, the implicit or explicit economic analysis is often weak or simply incorrect.” Of course, this (perhaps harsh) evaluation regarding the *École des Annales* is only understandable when we contrast it with North’s somewhat restricted view of the scientific approach to history. A view that, although stated in the late 1970s, seems to be too much influenced by the imported logical positivism that marked some of the rhetorical strategies of the cliometric revolution in the later 1950s and early 1960s. We could only speculate that North, as he became more and more distant from the standard view that only formal mathematical models capable of verification through direct observation are real models, would put his criticisms in a more amenable fashion from the 1980s onwards. For instance, if we accept the philosophical doctrines of logical positivism or logical empiricism, Charles Darwin’s theory of evolution through natural selection could not be classified as a scientific theory.
 19. In his introductory essay in *Capitalism and the Historians* (1954), anticipating in some aspects the myth-busting tone of cliometrics, [Hayek \(1954, p. 10\)](#) complained about the widespread myth by historians that the rise of “capitalism” or industrialization in England was associated with the worsening of workers’ living standards. Indeed, original institutionalist [Dugger \(1995, p. 457\)](#) writes that “Hayek was probably the first cliometrician.” However, this interpretation is very far from what the textual evidence can provide us.
 20. [North \(1965, p. 87\)](#) lists five great deficiencies of (old) economic history as practiced in his days: “(1) Vast areas of economic history have not been treated at all; that is, treated in the sense that economic theory and statistics have been used to examine the past. (2) Many writings in economic history are loaded with statements which have economic implications and imply causal relationships which are not only not supported in the research but which run counter to basic economic propositions. In fact, in most such cases, the author appears to be completely unaware of these implications. (3) Even more conspicuous is the character of the evidence advanced to support propositions. In good part it consists of a mishmash of quotations and oddly assorted statistics which do not provide any support or test for the propositions developed. (4) A good deal of economic history draws broad welfare conclusions which are by no stretch of the imagination warranted from the evidence cited.”

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21. Another point is that the counterfactual methodology, the greatest methodological innovation of New Economic History, has lesser accuracy the greater the potential repercussions effects of the causal variable in the test since the greater will be the general disequilibrium effects of the counterfactual proposition.
 22. Indeed, this is precisely the qualification that North will develop in his mature research program on the cognitive foundations of ideology, shared mental models, and beliefs post-1981 (e.g. see [North, 2005](#)). In [North's \(1994, p. 362\)](#) opinion, "[i]t is necessary to dismantle the [objective] rationality assumption underlying economic theory in order to approach constructively the nature of human learning." On this point, North is deeply influenced by Herbert Simon's theory of bounded rationality. As Herbert [Simon \(1986, pp. 210–1\)](#) stated: "If [. . .] we accept the proposition that both the knowledge and the computational power of the decision maker are severely limited, then we must distinguish between the real world and the actor's perception of it and reasoning about it. That is to say we must construct a theory (and test it empirically) of the process of decision. Our theory must include not only the reasoning processes but also the processes that generated the actor's subjective representation of the decision problem, his or her frame."
 23. The contents of North's textbook changed considerably in the three editions of the book (i.e. [1966, 1974, 1983](#)). The last edition was co-authored with Terry L. Anderson (North's former Ph.D. student) and Peter J. Hill ([North, Anderson, & Hill, 1983](#)). As [Brownlow \(2010, p. 309\)](#) documents, for instance, words such as institutions, property rights, and transaction costs received zero mentions in the first edition. In the third edition, in contrast, these words received 16, 45, and 6 mentions, respectively. In the first edition, North deeply emphasizes market integration, technology, and technical advances relative to institutional change.
 24. As [North \(1997a, pp. 256–7\)](#) writes: "Re-tooling turned out to change my life radically, since I quickly became convinced that the tools of neo-classical economic theory were not up to the task of explaining the kind of fundamental societal change that had characterized European economies from medieval times onward. We needed new tools, but they simply did not exist. Neoclassical theory was concerned with the operation of markets and assumed the existence of the underlying conditions that were a prerequisite to the operation of markets. It had nothing to say about how markets evolved. Moreover it was a static theory, and we needed to have a theory that was dynamic and could explain the evolution of economies through time. We needed new tools, but they simply did not exist. It was in the long search for a framework that would provide new tools of analysis that my interest and concern with the New Institutional Economics evolved. [. . .] The old institutional economics, because it failed to provide such a theoretical framework, never posed a serious alternative to neoclassical economics. Marxism was explicitly concerned with institutions, asked good questions, and had an explanation of long-run change, but there were too many flaws in the model. Making classes the unit of analysis and failing to incorporate population change as a key source of change were major shortcomings. The strengths of neoclassical theory were its uncompromising focus on scarcity and, hence, competition as the key to economics, its use of the individual as the unit of analysis, and the power of the economic way of reasoning. There had to be a way of melding the strengths of these diverse approaches into a theoretical structure. That is what I and others have set out to do in the New Institutional Economics."
 25. These conclusions were disputed by [Harley \(1988\)](#), who argued that the decline of ocean shipping costs pre-1850 was due to American market integration into the wider European economy. After 1850, Harley maintained that the costs of constructing and operating ships declined due to changes in mechanical and metallurgical technology.
 26. It is important to note that the expected return of institutional innovation depends on the general subjective perception of the costs and benefits of different organizational alternatives. The complementary institutional evolution is necessarily linked with the evolution of the dominant political and social views.
 27. In his "A Plea for Theory in Economic History" ([1929, p. 533](#)), Eli Heckscher had already pointed out that without economic theory it is very difficult if not impossible to offer an explanation and understand these and other economic processes. Regarding interference within prices and wages, for instance, it is necessary to find out how the system would have reached a different equilibrium

position if the interference was absent. Hence, Heckscher argues, regarding “the measures intended to prevent the workers from profiting from the Great Plague about the middle of the 14th century, how were farmers prevented from competing for the supply of labor, which had diminished as a consequence of the Plague? Before this is discussed, no true explanation has been given. Or take the parallel case of ‘customary rents’. If landowners really were, or felt, bound not to increase rents even when the demand for leases exceeded the supply at these rents, in what way was the choice affected between those wanting to take the same lease and of which only one could get it? To state that legislation or custom has been effective in cases like these is really saying nothing; for the economic problem must still be solved.”

28. North (1990b) generalized this transaction cost argument for politics, arguing that political markets are inherently less efficient than economic markets due to the higher costs of measuring and enforcing agreements.

References

- Acemoglu, D., Johnson, S., & Robinson, J. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, 91(5), 1369–1401. doi:10.1257/aer.91.5.1369.
- Alchian, A. (1965). Some economics of property rights. *Il Politico*, 30(4), 816–819.
- Ashton, T. S. (1946). The relation of economic history to economic theory. *Economica*, 50(13), 81–96. doi:10.2307/2550077.
- Ashton, T. S. (1948). *The industrial revolution, 1760-1830*. London: Oxford University Press.
- Baldwin, R. E. (1956). Patterns of development in newly settled regions. *The Manchester School*, 24(2), 161–79. doi:10.1111/j.1467-9957.1956.tb00981.x.
- Barzel, Y. (1989). *Economic analysis of property rights*. Cambridge: Cambridge University Press.
- Beveridge, W. H. (1939). Prices and wages in England from the twelfth to the nineteenth century. In *Price tables: Mercantile era (I)*. London: Longmans, Green.
- Binger, B. R., & Hoffman, E. (1989). Institutional persistence and change: The question of efficiency. *Journal of Institutional and Theoretical Economics*, 145(1), 67–84.
- Boianovsky, M. (2009). Furtado, North, and the new economic history. *Economia*, 10(4), 849–66.
- Boianovsky, M. (2010). A view from the tropics: Celso Furtado and the theory of economic development in the 1950s. *History of Political Economy*, 42(2), 221–266. doi:10.1215/00182702-2010-002.
- Boianovsky, M. (2015). Between Lévi-Strauss and Braudel: Furtado and the historical-structural method in Latin American political economy. *Journal of Economic Methodology*, 22(4), 413–438. doi:10.1080/1350178x.2015.1024879.
- Boianovsky, M. (2018). Economists and their travels, or the time when JFK sent Douglass North on a mission to Brazil. *Journal of the History of Economic Thought*, 40(2), 144–77.
- Boianovsky, M., & Monastério, L. (2018). O Encontro Entre Douglass North e Celso Furtado em 1961: Visões Alternativas Sobre a Economia Nordestina. *Revista Brasileira de Economia*, 72(3), 275–291. doi: 10.5935/0034-7140.20180013.
- Borah, W., Davisson, M., & Mosk, C. (1988). Melvin Moses Knight, 1887-1981. In *Economics* (pp. 76–78). Berkeley: University of California (System) Academic Senate. University of California: In Memoriam.
- Braudel, F. (1949). *La Méditerranée et Le Monde Méditerranéen à L'époque de Philippe II*. Paris: Armand Colin.
- Broda, P. (2021). Institutions, economy and politics: The debate between Commons and North. *European Journal of the History of Economic Thought*, 28(3), 419–35. doi:10.1080/09672567.2020.1837197.

-
- Brownlow, G. A. (2010). Structure and change: Douglass North's economics. *Journal of Economic Methodology*, 17(3), 301–316. doi:[10.1080/13501781003792662](https://doi.org/10.1080/13501781003792662).
- Buchanan, J. M., & Tullock, G. (1962). *The calculus of consent: Logical foundations of constitutional democracy*. Ann Arbor: University of Michigan Press.
- Callender, G. S. (1902). The early transportation and banking enterprises of the States in relation to the growth of corporations. *Quarterly Journal of Economics*, 17(1), 111–162. doi:[10.2307/1884713](https://doi.org/10.2307/1884713).
- Chandler, A. (1977). *The visible hand: The managerial revolution in American business*. Cambridge: Belknap Press.
- Clapham, J. (1926-1938). *An economic history of modern Britain*. Cambridge: Cambridge University Press.
- Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386–405. doi:[10.1111/j.1468-0335.1937.tb00002.x](https://doi.org/10.1111/j.1468-0335.1937.tb00002.x).
- Coase, R. H. (1960). The problem of social cost. *Journal of Law and Economics*, 3(1), 1–44. doi:[10.1086/466560](https://doi.org/10.1086/466560).
- Cochran, T. (1961). Did the civil war retard industrialization? *Mississippi Valley Historical Review*, 48(2), 197–210. doi:[10.2307/1902511](https://doi.org/10.2307/1902511).
- Colander, D. (2000). The death of neoclassical economics. *Journal of the History of Economic Thought*, 22(1), 127–143. doi:[10.1080/10427710050025330](https://doi.org/10.1080/10427710050025330).
- Cole, A. H. (1938). *Wholesale commodity prices in the United States, 1700-1861*. Cambridge: Harvard University Press.
- Cole, A. H., & Crandall, R. (1964). The international scientific committee on price history. *Journal of Economic History*, 24(3), 381–88. doi:[10.1017/s0022050700060903](https://doi.org/10.1017/s0022050700060903).
- Commons, J. R. (1924). *The legal foundations of capitalism*. New York: Macmillan.
- Conrad, A. H., & Meyer, J. R. (1958). The economics of slavery in the Antebellum South. *Journal of Political Economy*, 66(1), 94–130. doi:[10.1086/258020](https://doi.org/10.1086/258020).
- Davis, L., & North, D. C. (1970). Institutional change and American economic growth: A first step towards a theory of institutional innovation. *Journal of Economic History*, 30(1), 131–149. doi:[10.1017/s0022050700078633](https://doi.org/10.1017/s0022050700078633).
- Davis, L., & North, D. C. (1971). *Institutional change and American economic growth*. Cambridge: Cambridge University Press.
- Davis, L., Hughes, J., & Reiter, S. (1960). Aspects of quantitative research in economic history. *Journal of Economic History*, 20(4), 539–47. doi:[10.1017/s0022050700109805](https://doi.org/10.1017/s0022050700109805).
- Demsetz, H. (1967). Toward a theory of property rights. *American Economic Review*, 57(2), 347–359.
- Denzau, A. T., & North, D. C. (1994). Shared mental models: Ideologies and institutions. *Kyklos*, 47(1), 3–31. doi:[10.1111/j.1467-6435.1994.tb02246.x](https://doi.org/10.1111/j.1467-6435.1994.tb02246.x).
- Diebolt, C., & Hauptert, M. (2018). A cliometric counterfactual: What if there had been neither Fogel nor North? *Cliometrica*, 12(3), 407–34. doi:[10.1007/s11698-017-0167-8](https://doi.org/10.1007/s11698-017-0167-8).
- Downs, A. (1957). *An economic theory of democracy*. New York: Harper.
- Dugger, W. M. (1995). Douglass C. North's new institutionalism. *Journal of Economic Issues*, 29(2), 453–458. doi:[10.1080/00213624.1995.11505682](https://doi.org/10.1080/00213624.1995.11505682).
- Eggertsson, T. (1990). *Economic behavior and institutions*. Cambridge: Cambridge University Press.
- Engerman, S. L., & Sokoloff, K. L. (1997). Factor endowments, institutions, and differential paths of growth among new world economies. In Haber, S. (Ed.), *How Latin America Fell Behind* (pp. 260–304). Stanford: Stanford University Press.
- Engerman, S. L., & Sokoloff, K. L. (2000). Institutions, factor endowments, and paths of development in the new world. *Journal of Economic Perspectives*, 14(3), 217–32. doi:[10.1257/jep.14.3.217](https://doi.org/10.1257/jep.14.3.217).

-
- Fenoaltea, S. (1975). The rise and fall of a theoretical model: The manorial system. *Journal of Economic History*, 35(2), 386–409. doi:[10.1017/s0022050700075100](https://doi.org/10.1017/s0022050700075100).
- Fiani, R. (2004). An evaluation of the role of the state and property rights in Douglass North's analysis. *Journal of Economic Issues*, 38(4), 1003–1020. doi:[10.1080/00213624.2004.11506754](https://doi.org/10.1080/00213624.2004.11506754).
- Field, A. J. (1981). The problem with neo-classical institutional economics: A critique with special reference to the North/Thomas model of pre-1500 Europe. *Explorations in Economic History*, 18(1), 174–198. doi:[10.1016/0014-4983\(81\)90025-5](https://doi.org/10.1016/0014-4983(81)90025-5).
- Fine, B., & Milonakis, D. (2003). From principle of pricing to pricing of principle: Rationality and irrationality in the economic history of Douglass North. *Comparative Studies in Society and History*, 45(3), 546–570. doi:[10.1017/s0010417503000252](https://doi.org/10.1017/s0010417503000252).
- Fiori, S. (2002). Alternative visions of change in Douglass North's new institutionalism. *Journal of Economic Issues*, 36(4), 1025–1043. doi:[10.1080/00213624.2002.11506534](https://doi.org/10.1080/00213624.2002.11506534).
- Fishlow, A. (1965). *American railroads and the transformation of the ante-bellum economy*. Cambridge, MA: Harvard University Press.
- Fogel, R. W. (1964). *Railroads and American economic growth: Essays in econometric history*. Baltimore: Johns Hopkins University Press.
- Furtado, C. ([1959] 1963). *The economic growth of Brazil – A survey from colonial to modern times*. Berkeley: University of California Press. Translation by Rosa Freira D'Aguiar and E. Drysdale of Formação Econômica do Brasil. Rio de Janeiro: Fundo de Cultura.
- Galbraith, J. K. (1951). Conditions for economic change in underdeveloped countries. *Journal of Farm Economics*, 33(4), 689–696. doi:[10.2307/1233431](https://doi.org/10.2307/1233431).
- Galenson, D. W. (1983). Review of *Structure and change in economic history* by Douglass C. North. *Journal of Political Economy*, 91(1), 188–90. doi:[10.1086/261137](https://doi.org/10.1086/261137).
- Goldin, C. (1995). Cliometrics and the nobel. *Journal of Economic Perspectives*, 9(2), 191–208. doi:[10.1257/jep.9.2.191](https://doi.org/10.1257/jep.9.2.191).
- Goldstone, J. (1982). Review of *Structure and change in economic history* by Douglass C. North. *Contemporary Sociology*, 11(6), 687–8. doi:[10.2307/2068530](https://doi.org/10.2307/2068530).
- Gordon, D. F. (1955a). Operational propositions in economic theory. *Journal of Political Economy*, 63(2), 150–161. doi: [10.1086/257655](https://doi.org/10.1086/257655).
- Gordon, D. F. (1955b). Professor samuelson on operationalism in economic theory. *Quarterly Journal of Economics*, 69(2), 305–310. doi: [10.2307/1882155](https://doi.org/10.2307/1882155).
- Gordon, D. F. (1974). A neo-classical theory of Keynesian unemployment. *Economic Inquiry*, 12(4), 431–59. doi:[10.1111/j.1465-7295.1974.tb00415.x](https://doi.org/10.1111/j.1465-7295.1974.tb00415.x).
- Groenewegen, J., Kerstholt, F., & Nagelkerke, A. (1995). On innNew and old institutionalism: Douglass North Building Bridges. *Journal of Economic Issues*, 29(2), 467–475. doi:[10.1080/00213624.1995.11505684](https://doi.org/10.1080/00213624.1995.11505684).
- Hamilton, E. J. (1934). *American treasure and the price revolution in Spain* (pp. 1501–1650). Cambridge: Harvard University Press.
- Hamilton, E. J. (1936). *Money, prices, and wages in Valencia, Aragon, and Navarre* (pp. 1351–1500). Cambridge: Harvard University Press.
- Harley, C. K. (1988). Ocean Freight rates and productivity, 1740–1913: The primacy of mechanical invention. *Journal of Economic History*, 48(4), 851–76. doi:[10.1017/s0022050700006641](https://doi.org/10.1017/s0022050700006641).
- Hauser, H. (1936). *Recherches et Documents sur L'Histoire des Prix en France de 1500 à 1800*. Paris: Les Presses Modernes.
- Hayek, F. A. (1937). Economics and knowledge. *Economica*, 4(13), 33–54. doi:[10.2307/2548786](https://doi.org/10.2307/2548786).
- Hayek, F. A. (1954). *Capitalism and historians*. Chicago: University of Chicago Press.
- Heckscher, E. F. (1929). A plea for theory in economic history. *Economic Journal*, 39(Supplement 1), 525–534. doi:[10.1093/ej/39.supplement_1.525](https://doi.org/10.1093/ej/39.supplement_1.525).

-
- Hodgson, G. M. (1998). The approach of institutional economics. *Journal of Economic Literature*, 36(1), 166–92.
- Hoover, E. M. (1937). *Location theory and the shoe and leather industries*. Cambridge: Harvard University Press.
- Hughes, J. R. (1982). Douglass North as a teacher. In Ransom, R. L., Sutch, R., & Walton, G. M. (Eds.), *Explorations in the New Economic History: Essays in Honor of Douglass C. North* (pp. 3–11). New York: Academic Press.
- Innis, H. (1920). *Fur trade in Canada*. New Haven: Yale University Press.
- Innis, H. (1933). *The cod fishery: The history of an international economy*. New Haven: Yale University Press.
- Innis, H. (1940). *Problems of staple production in Canada*. Toronto: University of Toronto Press.
- Júnior, P., & Caio (1942). *Formação do Brasil Contemporâneo*. São Paulo: Brasiliense.
- Júnior, P., & Caio (1945). *História Econômica do Brasil*. São Paulo: Brasiliense.
- Knight, M. M. (1926). *Economic history of Europe to the end of the middle ages*. New York: Houghton Mifflin.
- Knight, M. M. (1928). Water and the course of Empire in French North Africa. *Quarterly Journal of Economics*, 43(1), 44–93. doi:10.2307/1883941.
- Knight, M. M., Flugel, F., & Barnes, E. E. (1928). *Economic history of Europe in modern times*. Boston: Houghton Mifflin.
- Kling, A., & Schulz, N. (2011). *Invisible wealth: The hidden story of how markets work*. New York: Encounter.
- Krul, M. (2018). *The new institutional economic History of Douglass C. North: A critical interpretation*. London: Palgrave.
- La Croix, S. (2018). Douglass North and Cliometrics. In Diebolt, C., & Hauptert, M. (Eds.), *Handbook of Cliometrics* (pp. 1–27). Berlin: Springer.
- Le Roy Ladurie, E. (1966). *Les Paysans de Languedoc*. Paris: SEVPEN.
- Levi, M., & North, D. C. (1982). Towards a property-rights theory of exploitation. *Politics & Society*, 11(3), 315–320. doi:10.1177/003232928201100304.
- Lewis, A. W. (1954). Economic development with unlimited supplies of labour. *Manchester School*, 22(2), 139–91. doi:10.1111/j.1467-9957.1954.tb00021.x.
- Lösch, A. (1938). The nature of economic regions. *Southern Economic Journal*, 5(1), 71–78. doi:10.2307/3693804.
- McCloskey, D. N. (1994). Fogel and North: Statics and dynamics in historical economics. *Scandinavian Journal of Economics*, 96(1), 161–166. doi:10.2307/3440594.
- McCloskey, D. N. (1997). *Econometric history*. London: Macmillan.
- Ménard, C., & Shirley, M. M. (2014). The contribution of Douglass North to the new institutional economics. In Galiani, S., & Sened, I. (Eds.), *Institutions, Property Rights, and Economic Growth: The Legacy of Douglass North* (pp. 11–29). Cambridge: Cambridge University Press.
- Meyer, J. R., & Conrad, A. H. (1957). Economic theory, statistical inference and economic history. *Journal of Economic History*, 17(4), 524–44. doi:10.1017/s0022050700079092.
- Milgrom, P. R., North, D. C., & Weingast, B. R. (1990). The role of institutions in the revival of trade: The law merchant, private judges, and the champagne fairs. *Economics and Politics*, 2(1), 1–23. doi:10.1111/j.1468-0343.1990.tb00020.x.
- Mills, C. W. (1959). *The sociological imagination*. Oxford: Oxford University Press.
- Millward, R., & North, D. C. (1983). Review of *Structure and change in economic history* by Douglass C. North. *Economic Journal*, 93(372), 963–5. doi:10.2307/2232785.
- Milonakis, D., & Fine, B. (2004). Douglass North's remaking of economic history: A critical appraisal. London: SOAS Unpublished Manuscript.

-
- Milonakis, D., & Fine, B. (2007). Douglass North's remaking of economic history: A critical appraisal. *Review of Radical Political Economics*, 39(1), 27–57. doi:10.1177/0486613406296896.
- Monastério, L., & Erhl, P. (2019). Colônias de Povoamento versus Colônias de Exploração: De Heeren a Acemoglu. *Análise Econômica*, 27(72), 213–39.
- Myhrman, J., & Weingast, B. R. (1994). Douglass C. North's contributions to economics and economic history. *Scandinavian Journal of Economics*, 96(1), 185–193. doi:10.2307/3440597.
- North, D. C. (1950). Some recent views of the modern large corporation. *Explorations in Entrepreneurial History*, 2(2), 71–90.
- North, D. C. (1952). Capital accumulation in life insurance between the civil war and the investigation of 1905. In Miller, W. (Ed.), *Men in Business* (pp. 238–53). Cambridge: Harvard University Press.
- North, D. C. (1953). Entrepreneurial policy and the internal organization in large life insurance companies at the time of the Armstrong investigation. *Explorations in Entrepreneurial History*, 5(3), 139–61.
- North, D. C. (1954). Life insurance and investment banking at the time of the Armstrong investigation. *Journal of Economic History*, 14(3), 209–28. doi:10.1017/s0022050700065670.
- North, D. C. (1955). Location theory and regional economic growth. *Journal of Political Economy*, 63(3), 243–58. doi:10.1086/257668.
- North, D. C. (1956a). Exports and regional growth: A reply. *Journal of Political Economy*, 64(2), 165–8. doi: 10.1086/257772.
- North, D. C. (1956b). International capital flows and the development of the American west. *Journal of Economic History*, 16(4), 496–505. doi: 10.1017/s002205070005909x.
- North, D. C. (1958a). A note on professor Rostow's take-off into self-sustained growth. *Manchester School*, 26(1), 68–75. doi: 10.1111/j.1467-9957.1958.tb00925.x.
- North, D. C. (1958b). Ocean freight rates and economic development 1730–1913. *Journal of Economic History*, 18(4), 537–555. doi: 10.1017/s0022050700107739.
- North, D. C. (1959). Agriculture in regional economic growth. *Journal of Farm Economics*, 41(5), 943–951. doi:10.2307/1235230.
- North, D. C. (1960a). The United States balance of payments, 1790-1860. In W. N. Parker (Ed.), *Trends in the American Economy in the Nineteenth Century: 24th Conference on Research in Income and Wealth* (pp. 573–628) Princeton: Princeton University Press. W. N. Parker.
- North, D. C. (1960b). The United States in the international economy, 1790-1950. In S. Harris (Ed.), *American Economic History*. New York: McGraw-Hill.
- North, D. C. (1960c). International capital movements in historical perspective. In R. F. Mikesell (Ed.), *US Private and Government Investment Abroad*. Eugene: University of Oregon Press.
- North, D. C. (1961a). *The economic growth of the United States 1790-1860*. Englewood Cliffs: Prentice-Hall.
- North, D. C. (1961b). *Analysis of the new Sudene five year plan for the development of the Northeast [Douglass Cecil North papers, box 47]*. David M. Rubenstein Rare Book & Manuscript Library, Duke University.
- North, D. C. (1961c). Four lectures in regional economic analysis, presented at the Getulio Vargas foundation. Published as O Crescimento Econômico regional: Quatro conferências do professor Douglass C. North. *Revista Brasileira de Economia*, 15(3), 5–72.
- North, D. C. (1961d). Early national income estimates of the United States. *Economic Development and Cultural Change*, 9(3), 387–96. doi: 10.1086/449914.
- North, D. C. (1963). Quantitative research in American economic history. *American Economic Review*, 53(1), 128–30.
- North, D. C. (1965). The state of economic history. *American Economic Review*, 55(1–2), 86–91.

-
- North, D. C. (1966). *Growth and welfare in the American past: A new economic history*. Englewood Cliffs: Prentice-Hall.
- North, D. C. (1968a). A new economic history of Europe. *Journal of Institutional and Theoretical Economics*, 124(1), 139–47.
- North, D. C. (1968b). Sources of productivity change in Ocean Shipping, 1600–1850. *Journal of Political Economy*, 76(5), 953–970. doi: [10.1086/259462](https://doi.org/10.1086/259462).
- North, D. C. (1968c). History: Economic history. *International Encyclopedia of the Social Sciences* (Vols 5-6, pp. 468–474). New York: Macmillan.
- North, D. C. (1971). Institutional change and economic growth. *Journal of Economic History*, 31(1), 118–125. doi:[10.1017/s0022050700094109](https://doi.org/10.1017/s0022050700094109).
- North, D. C. (1974). Beyond the new economic history. *Journal of Economic History*, 34(1), 1–7. doi:[10.1017/s0022050700079596](https://doi.org/10.1017/s0022050700079596).
- North, D. C. (1977a). The new economic history after twenty years. *American Behavioral Scientist*, 21(2), 187–200. doi: [10.1177/000276427702100203](https://doi.org/10.1177/000276427702100203).
- North, D. C. (1977b). Markets and other allocation systems in history: The challenge of Karl Polanyi. *Journal of European Economic History*, 6(3), 703–16.
- North, D. C. (1978a). Evaluating three schools of economic history. *Journal of Economic History*, 38(1), 77–80. doi: [10.1017/s0022050700088173](https://doi.org/10.1017/s0022050700088173).
- North, D. C. (1978b). Structure and performance: The task of economic history. *Journal of Economic Literature*, 16(3), 963–78.
- North, D. C. (1978c). Review of *the livelihood of man*, by Karl Polanyi. *Business History Review*, 52(3), 398–399. doi: [10.2307/3113738](https://doi.org/10.2307/3113738).
- North, D. C. (1981). *Structure and change in economic history*. New York: W.W. Norton Company.
- North, D. C. (1984a). Transaction costs, institutions, and economic history. *Journal of Institutional and Theoretical Economics*, 140(1), 7–17.
- North, D. C. (1984b). Government and the costs of exchange in history. *Journal of Economic History*, 44(2), 255–64. doi: [10.1017/s0022050700031855](https://doi.org/10.1017/s0022050700031855).
- North, D. C. (1985). The growth and government in the United States: An economic historian's perspective. *Journal of Public Economics*, 28(3), 383–99. doi:[10.1016/0047-2727\(85\)90066-0](https://doi.org/10.1016/0047-2727(85)90066-0).
- North, D. C. (1986). Is it worth making sense of Marx? *Inquiry*, 29(1), 57–63. doi:[10.1080/00201748608602080](https://doi.org/10.1080/00201748608602080).
- North, D. C. (1990a). *Institutions, institutional change, and economic performance*. Cambridge: Cambridge University Press.
- North, D. C. (1990b). A transaction cost theory of politics. *Journal of Theoretical Politics*, 2(4), 355–367. doi: [10.1177/0951692890002004001](https://doi.org/10.1177/0951692890002004001).
- North, D. C. (1991). Institutions. *Journal of Economic Perspectives*, 5(1), 97–112. doi: [10.1257/jep.5.1.97](https://doi.org/10.1257/jep.5.1.97).
- North, D. C. (1992). Institutions and economic theory. *American Economist*, 36(1), 3–6. doi:[10.1177/056943459203600101](https://doi.org/10.1177/056943459203600101).
- North, D. C. (1994). Economic performance through time. *American Economic Review*, 84(3), 359–68.
- North, D. C. (1997a). In R. W. Spencer, & D. A. Macpherson (Ed). *Lives of Laureates: Thirteen Nobel Economists* (pp. 251–68). Cambridge: MIT Press.
- North, D. C. (1997b). Cliometrics - 40 Years on. *American Economic Review*, 87(2), 412–4.
- North, D. C. (2005). *Understanding the process of economic change*. Princeton: Princeton University Press.
- North, D. C. (2008). Interview with Douglass C. North. In J. S. Lyons, L. P. Cain, & S. H. Williamson (Eds). *Reflections on the Cliometric Revolution: Conversations With Economic Historians* (pp. 194–213). London: Routledge.

-
- North, D. C. (2009). Interview. In K. Horn (Ed.), *Roads to Wisdom: Conversations with Ten Nobel Laureates in Economics* (pp. 153–172). Cheltenham: Edward Elgar.
- North, D. C., & Heston, A. (1960). The estimation of shipping earnings in historical balance of payments studies. *Canadian Journal of Economics and Political Science*, 26(2), 265–76. doi:10.2307/138654.
- North, D. C., & Thomas, R. P. (1970). An economic theory of the growth of the western world. *Economic History Review*, 23(1), 1–17. doi:10.2307/2594560.
- North, D. C., & Thomas, R. P. (1971). The rise and fall of the manorial system: A theoretical model. *Journal of Economic History*, 31(4), 777–803. doi:10.1017/s0022050700074623.
- North, D. C., & Thomas, R. P. (1973). *The rise of the western world: A new economic history*. Cambridge: Cambridge University Press.
- North, D. C., & Wallis, J. J. (1987). Measuring the transaction sector in the American economy, 1870–1970. In Engerman, S. L., & Gallman, R., E. (Eds.), *Income and Wealth: Long-Term Factors in American Economic Growth* (pp. 95–161). Chicago: University of Chicago Press.
- North, D. C., & Weingast, B. R. (1989). Constitutions and commitment: The evolution of institutions governing public choice in seventeenth-century England. *Journal of Economic History*, 49(4), 803–32. doi:10.1017/s0022050700009451.
- North, D. C., Anderson, T. L., & Hill, P. J. (1983). *Growth and welfare in the American past* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Olson, M. (1965). *The logic of collective action: Public goods and the theory of groups*. Cambridge, MA: Harvard University Press.
- Polanyi, K. (1977). *The Liveliness of Man: Studies in Social Discontinuity*. New York: Academic Press.
- Parker, W. N. (Ed.) (1960). *Trends in the American Economy in the Nineteenth Century: 24th Conference on Research in Income and Wealth*. Princeton: Princeton University Press.
- Polanyi, K. (1944). *The great transformation*. New York: Farrar & Rinehart.
- Pontecorvo, G., & Stewart, C. (1979). Melvin Moses Knight. *Exploration in Economic History*, 16(3), 243–45. doi:10.1016/0014-4983(79)90018-4.
- Popper, K. R. (1976). The logic of the social sciences. In Adorno, T. W., Albert, H., Dahrendorf, R., Habermas, J., Pilot, H. and Popper, K. R. (Eds), *The Positivist Dispute in German Sociology*. Translated by G. Adey and D. Frisby. New York: Harper and Row, pp. 87-104.
- Posthumus, N. W. (1943). *Nederlandsche Prijsgeschiedenis*. Leiden: E. J. Brill.
- Pribram, A. F. (1938). *Materialen zur Geschichte der Preise und Löhne in Österreich*. Vienna: C. Veberreuters Verlag.
- Pryor, F. L. (1982). Review of *Structure and change in economic history* by Douglass C. North. *Journal of Economic History*, 42(4), 986–9. doi:10.1017/s0022050700028874.
- Rostow, W. W. (1948). *British economy of the nineteenth century: Essays*. Oxford: Clarendon Press.
- Rostow, W. W. (1956). The take-off into self-sustained growth. *Economic Journal*, 66(261), 25–48. doi:10.2307/2227401.
- Rostow, W. W. (1960). *The stages of economic growth: A non-communist manifesto*. Cambridge: Cambridge University Press.
- Rostow, W. W. (1982). Review of *Structure and change in economic history* by Douglass C. North. *Business History Review*, 56(2), 299–301. doi:10.2307/3113981.
- Rutherford, M. (1996). *Institutions in economics: The old and the new institutionalism*. Cambridge: Cambridge University Press.
- Rutherford, M. (2001). Institutional economics: then and now. *Journal of Economic Perspectives*, 15(1), 173–194. doi:10.1257/jep.15.3.173.
- Samuelson, P. A. (1947). *Foundations of economic analysis*. Cambridge: Harvard University Press.

-
- Schumpeter, J. A. (1954). *History of economic analysis*. New York: Oxford University Press.
- Simon, H. (1986). Rationality in psychology and economics. In Hogarth, R. M., & Reder, M. W. (Eds.), *Rational Choice: The Contrast Between Economics and Psychology* (pp. 25–40). Chicago: University of Chicago Press.
- Skinner, Q. (1990). *The return of grand theory in the human sciences*. Cambridge: Cambridge University Press.
- Smith, A. (1776/1970). *An inquiry into the nature and causes of the wealth of nations*. Harmondsworth: Penguin.
- Snowdon, B. (2016). Institutions, economic growth and development: A conversation with Nobel Laureate Douglass North. *World Economics*, 17(4), 107–152.
- Stigler, G.J. (1951). The division of labor is limited by the extent of the market. *Journal of Political Economy*, 59(3), 185–193. doi:10.1086/257075.
- Sweldberg, R. (2015). Schumpeter and Talcott Parsons. *Journal of Evolutionary Economics*, 25(1), 215–222. doi: 10.1007/s00191-014-0368-2.
- Tiebout, C. (1956). Exports and regional growth. *Journal of Political Economy*, 64(2), 160–4. doi:10.1086/257771.
- Tullock, G. (1983). Review of *Structure and change in economic history* by Douglass C. North. *Public Choice*, 40(2), 233–4. doi:10.1007/bf00175002.
- Vandenberg, P. (2002). North's institutionalism and the prospect of combining theoretical approaches. *Cambridge Journal of Economics*, 26(2), 217–35. doi:10.1093/cje/26.2.217.
- Van der Wee, H. (1975). Review of *The rise of the western world: A new economic history* by Douglass C. North and Robert Paul Thomas. *Business History Review*, 49(2), 237–9. doi:10.2307/3113703.
- Wallis, J. J. (2016). The new economic history and beyond: The scholarship of Douglass C. North. *Journal of Economic History*, 76(3), 937–47. doi:10.1017/s0022050716000851.
- Whaples, R. (1991). A quantitative history of the *Journal of Economic History* and the cliometric revolution. *Journal of Economic History*, 51(2), 289–301. doi:10.1017/s0022050700038948.
- Williamson, O. E. (1975). *Markets and hierarchies: Analysis and antitrust implications*. New York: The Free Press.
- Wisman, J. D., Willoughby, J., & Sawers, L. (1988). The search for grand theory in economic history: North's challenge to Marx. *Social Research*, 55(4), 747–773.
- Zouboulakis, M. S. (2005). On the evolutionary character of North's idea of institutional change? *Journal of Institutional Economics*, 1(2), 139–153. doi:10.1017/s1744137405000147.

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